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José Miguel Soares Barbosa

From Higher Education to the Labour Market: Employability across five EU countries

Do Ensino Superior para o Mercado de Trabalho: Empregabilidade de cinco países da UE

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Dissertação apresentada à Universidade de Aveiro para cumprimento dos requisitos necessários à obtenção do grau de Mestre em Economia, realizada sob a orientação científica da Professora Doutora Maria Elisabeth Teixeira Pereira e Rocha, Professora Auxiliar do Departamento de Economia, Gestão, Engenharia Industrial e Turismo da Universidade de Aveiro.

Dedico este trabalho à minha família e à Ana, por todo o apoio.

o júri

Presidente

Prof. Doutora Marta Alexandra da Costa Ferreira Dias
Professora Auxiliar da Universidade de Aveiro

Prof. Doutora Priscila Andrea Marques Ferreira
Professora Auxiliar da Escola de Economia e Gestão da Universidade do Minho

Prof. Doutora Maria Elisabeth Teixeira Pereira e Rocha
Professora Auxiliar da Universidade de Aveiro (Orientadora)

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palavras-chave Graduados, Empregabilidade, Economia da Educação, Competências, ACP, IES

resumo

As elevadas taxas de desemprego jovem verificadas em alguns países europeus sugerem que os graduados têm dificuldade em corresponder às necessidades dos empregadores. Este estudo visa encontrar explicações para a existente divergência entre as competências que os estudantes adquirem durante o Ensino Superior e as que as empresas procuram contratar. O presente estudo analisa dados de cinco países europeus: Portugal, Espanha, Grécia, Letónia e Polónia. A recolha de informação foi efetuada, no âmbito do projecto #EuropeHome, através de três questionários aplicados a três grupos alvo: estudantes e académicos, das áreas de Economia, Gestão e Engenharias, e empresários. Foi feita uma análise qualitativa das respostas, da qual se pode afirmar que as competências interpessoais, de aprendizagem e de comunicação são o grupo de competências que os três públicos-alvo consideram essenciais para melhorar a empregabilidade dos graduados. Por sua vez, em relação às competências que os graduados mais carecem, os três grupos consideram os atributos pessoais, interpessoais e de comunicação. Em termos quantitativos, foi efectuada uma ACP, cujos resultados vêm suportar os indicadores anteriores e ainda acrescenta que, as soluções terão que ser baseadas na cooperação entre ambos os lados, através da preparação de cursos destinados e mais relevantes para o mercado de trabalho, através de estágios e respetivo acompanhamento conjunto pela universidade e empresa, que ajudem a orientar os estudantes na sua transição da vida académica para o mercado de trabalho. Estas conclusões são comuns para os cinco países, quer nas principais competências em foco, quer nas soluções a ter em conta para diminuir a divergência entre os graduados e as necessidades dos empregadores.

keywords Graduates, Employability, Economics of Education, Skills, PCA, HEIs.

abstract The high youth unemployment rates recorded in some European countries, suggest that graduates face some difficulties in meeting the needs of employers. This study aims to find the explanations for the existing mismatch between the skills that students are learning in Higher Education and those that companies are looking for to hire. The present study analyses data of five European countries: Portugal, Spain, Greece, Latvia and Poland. The data collection was performed, under the #EuropeHome project, through three questionnaires administered to three target groups: students and academics of the areas of engineering, business management and economics studies, and also the entrepreneurs. From the qualitative analysis of the responses that was made, which can be concluded that the interpersonal, learning and communication skills are the group which the three audiences consider essential to improve the employability of the graduates. In turn, in relation to the skills that graduates lack the most, the three target groups pointed the personal, interpersonal and communication skills. In quantitative terms, it was implemented a PCA, whose outputs support the previous indicators and it also adds that, the solutions will have to be based on cooperation between both sides, through the preparation of relevant courses for the labour market, through the internships and appropriate joint monitoring by the university and company together, to help guiding students in their transition from education life to the labour market. These findings are common to the five countries, whether related to the main skills in focus, or the solutions to be taken into account in order to reduce the skills mismatch between the graduates and the needs of employers.

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List of Abbreviations

EEC – European Economic Community

EU – European Union

F – Female

GDP – Gross Domestic Product

GFCF – Gross Fixed Capital Formation

HEAE – Hellenic Adults Education

HEI – Higher Education Institution

ILO – International Labour Organization

IMF – International Monetary Fund

ISCED – International Standard Classification of Education

KMO – Kayser-Meyer-Olkin

M – Male

MoU – Memorandum of Understanding

OECD – Organisation for Economic Co-operation and Development

PCA – Principal Component Analysis

R&D – Research and Development

UK – United Kingdom

USA – United States of America

#EH – #EuropeHome

1. Introduction

The main indicators of the European countries, according to Eurostat data, in 2015, had a positive evolution, comparing to the previous five or six years, right after 2008 (O'Higgins, 2012; Storm & Naastepad, 2014; Duffy et al, 2014). However, it is possible to observe that there are still a range of problems to be solved, such as the low levels of income and investments or the high levels of unemployment, which also includes youth unemployment (Banerji et al, 2014). In fact, the youth unemployment is one of the gaps that have been debated, finding concrete causes and solutions. What happens is that patterns of total unemployment and youth unemployment vary within Europe, making it more difficult to specify the causes (Choudhry et al, 2012; O'Higgins, 2012; Bruno et al, 2014).

Stating that the increase of unemployment[1] levels is a consequence of the crisis developed in Europe, since 2008, the unemployment characterized by a different reality from country to country (Fingleton et al, 2012; Dustmann et al, 2014). There are countries, such as Ireland and Cyprus, whose unemployment brutally increased since the beginning of the crisis, establishing a strong causal relationship between them. There is a second group whose members already had a considerable unemployment and youth unemployment rates before the crisis, which remained after 2008 (for example, Spain and Greece). Finally, a third group is observed, with countries as France and Germany, whose unemployment before the crisis was considered below average and the small increases that followed after 2008 nothing are related with the economic global problems (Choudhry et al, 2012; ILO, 2012; Bakas & Papapetrou, 2014; Bruno et al, 2014; Duffy et al, 2014; Servaas & Naastepad, 2014; Kelly & McGuinness, 2015).

The high rates of total unemployment and youth unemployment, in some European countries, reinforced the importance to the concept of Employability and, as a consequence, led to the implementation of further reforms in higher education, through the Bologna Process and also to the drawn of new targets across the Europe Strategy

[1] Unemployment: situation of individuals aged between 15 and 74 years old who are without and, simultaneously, seeking for job over a specific period (reference period or previous three weeks), for which they would available to work, paid or unpaid (INE: DES/TR-DMSI/SM – 12th August)

2020 (European Commission, 2010; Cardoso et al, 2014). The aim of these measures is to improve the attributes, skills and other ways to promote the employability of the graduates, facilitating the transition from academic stage to the labour market (Cabral & Baptista, 2014; Panitsides, 2014; Vasile et al, 2014; Dragomirescu-Gaina et al, 2015). In the case of the Bologna Process, the intent is to evaluate the higher education based on the employability of students. According to Stiwne and Alves (2010), the Bologna Process defined three key priorities for European future, such as the enlargement targets on the participation of students in higher education; the implementation of corporate internships in the academic programs promoting the employability; and, finally, the integration of the concept of "lifelong learning" in the higher education system. The authors also claim that the Bologna Process has lead to some structural changes. Particularly in Portugal, the number of students in the 1st cycle has increased since 2007, giving them the possibility to look for a job after finishing this first stage or keep studying in 2nd cycle and 3rd cycle (Oppedisano, 2014). This data might be related to the incentives for adults continuing their academic lives in higher education or even with international exchange programs between universities around the world (Veiga et al, 2008).

The European Strategy for 2020 traced the target of 40% of the people, aged between 30 to 34 years old, who possess high education qualifications, increasing the employability and the investment levels in R&D and innovation, for example. It also encouraged the Member States of the European Union (EU) and the respective institutions of higher education (universities and polytechnics, public and private) developing their education systems and considering a society based on knowledge. Thereby, students will be oriented to the needs of the labour market. In summary, the strategies of the EU for 2020 are based on the "smart, sustainable and inclusive" growth (Cabral & Baptista, 2014; Panitsides, 2014; Vasile et al, 2014).

After presenting the thesis's theme and its importance in a sustainable way, some of the main goals of this study are to quantify the mismatch between the learned and required skills and understanding which skills groups are the ones that Higher Education Institutions (HEIs) and students should invest significantly or the skills groups that they should not promote, in order to improve the employability of the graduates and reducing

the youth unemployment rate. For this purpose, under the Project *#EuropeHome* (#EH), three questionnaires were applied to three target groups: academics, employers and students from five different countries, Portugal, Spain, Greece, Latvia and Poland. The questioned students incorporate the study fields of Business Management, Economics and Engineering/Computing.

The Project #EH is directly related to the graduates' employability in order to correspond to the expected labour market necessities. A group of eight European institutions are partners in the project, including five European universities, each one corresponding to five different countries, such as the University of Alcalá d'Henares, Spain, as the head coordinator of #EH Project; the University of Aveiro, Portugal; the University of Latvia, Latvia; the Aristotle University of Thessaloniki, Greece; and the Technical University of Lodz, Poland. The three remaining collaborators are the Campus Europae, a consortium of twenty-one European universities; the Collective Intelligence Centre, in Riga, Latvia; and the Erasmus Student Network. The main goal of *#EH* project is to evaluate the skills mismatch between the graduates' needs and the employers' requirements. Focusing on several tasks such as the promotion of the relevance of the entrepreneurial education and the importance of academic and professional experiences, abroad or in students' home country, help to decrease the gap. In short, the #EH Project aims to provide empirical conclusions which allow the universities and companies working together and creating benefits, not only for both, but mainly for the students and graduates.

The present master's dissertation is structured as follow. After this introduction, in chapter two will be displayed the literature review, related to the unemployment theories, whose historical perspectives can be a support for the present research, and also complemented by the nuclear issue of the dissertation, which is the HEIs and the employability. There, issues such as the conceptual framework, the set of skill groups and some perspectives for the next decade will be included. As last part of literature review, chapter three describes the five European countries' characteristics, differences and similarities on the topics under study between them. Chapter four presents the data and the methodology applied in this study, specifying the sample, procedure, tools and statistical analysis. The results and discussion are exposed on chapter five, revealing the

essential differences and problems of skills mismatch between education system and labour market. Lastly, the conclusions, limitations and the recommendations for the future are present on chapter six.

2. Employability versus Youth Unemployment

The concept of employability is also related to unemployment. In this section, where are some key ideas about these two concepts, it is important to begin with the definition of "youth unemployment". In order to reveal the importance of the issue, the empirical evidence elucidates its evolution and its limits, in particular through the unemployment theories that will be described in subsection 2.1.

According to the annual publication of the International Labour Organization (ILO), the official designation of youth unemployment is the set of people aged 15-24 years, who have no job but are able to work and consistently seeking job (Global Employment Trends Brief, 2005). The data revealed in the publication of the ILO (Global Employment Trends, 2014) show that "the global youth unemployment rose to 13.1 per cent in 2013, from 12.9 per cent in 2012 and 11.6 per cent in 2007", representing 74.5 million of young people. Specifically, the data revealed on the five countries under study are shown in Table 1:

Table 1: Youth Unemployment Rate (%)

	2007		2011		2013		2015
Portugal	16.7	↗	30.3	↗	38.1	↘	32.0
Spain	18.1	↗	46.2	↗	55.5	↘	48.3
Greece	22.7	↗	44.7	↗	58.3	↘	49.7
Latvia	10.6	↗	31.0	↘	23.2	↘	16.3
Poland	21.7	↗	25.8	↗	27.3	↘	20.9

Source: Own elaboration with data retrieved from Eurostat

Observing Table 1, there are several important remarks to refer. Firstly, analysing the period 2007-2015, the only country where youth unemployment rate decreased was Poland (from 21.7% in 2007, to 20.9% in 2015). On the other hand, the biggest increase was detected in Spain (from 18.1% in 2007, to 48.3% in 2015), although, in 2015, the highest rate of youth unemployment is related to Greece (49.7%). Greece also represents the highest youth unemployment rate over all of these years, in 2013, achieving the rate of 58.3%. Finally, it is important to note that Latvia was the country with the lowest youth

unemployment rate in 2007 (10.6%), and this trend remained in 2015 (16.3%). Furthermore, Latvia was also the first country of the five to reverse the negative cycle, declining from 31.0% in 2011, to 23.2% in 2013.

2.1. Unemployment Theories

According to Pacitti (2011: 1) "*one of the largest challenges for neoclassical economic theory has been to explaining the existence and persistence of unemployment in a competitive capitalist economy*". During the 20th century and the beginning of the 21st century, prevailed several theories related to the labour market and, specifically, with unemployment. Pacitti (2011) asserts that there is a paradox, because unemployment is a "phenomenon in equilibrium", which is part of a labour market in "inconstant imbalance". In order to summarize the evolution of unemployment theories, the views of some economists in this evolutionary process will be discussed.

Over Kalecki's view (1943), the full employment situation is not an economic problem because the policies that encourage such balance increase the aggregate demand and also increase the government profits. Full employment is a political problem because it will imply that the entire active population was employed by the salary they would like. Throuh this entrepreneur's perspective, it is not appropriate because their own interests prevail over the interests of the workers. In conclusion, the unemployment might be seen as a disciplinarian element of the workforce or, as Kalecki (1943:326) noted, the unemployment is an "*integral part of a normal capitalist system*".

In a different approach, Keynes (1964) considers the target of full employment impossible because the equilibrium wage is unreachable. According to Keynes, this happens due to the discrepancy between the supply and demand conditions of labour, where entrepreneurs establish an impractical level of salary for the supply side. If wage stickiness exists and if the employment level is determined by aggregate demand, full employment cannot be considered a natural equilibrium point of an economy. Thus, the involuntary unemployment not only can remain, it may be a persistent condition as well,

which extends over the time. So, the Keynesian theory asserts that recessions and unemployment are understood as endogenous variables of the economy.

In addition to the previous views, Friedman (1968) recognizes unemployment as "voluntary and frictional" (Pacitti, 2011:1). He believes that, in the long term, the economy will always achieve a balance, not in a full employment situation but in presence of a "natural rate of unemployment". As a consequence, employment level can only be raised above the natural unemployment rate if the aggregate demand also upturns, which will increase the inflation. Friedman (1968) named it as stagflation, a situation characterized by the high levels of unemployment and inflation and also by the deceleration of the economic growth. The author also argues this phenomenon, expounding it as a result of employee's willingness to seek the most attractive positions for their careers and also a result of the imperfect information of the existing jobs in labour market.

As Kalecki (1943) mentioned, the German economist Karl Marx (1976) observed unemployment as a "central element of capitalism" by putting capitalism interests over the needs of a balanced economy. The entrepreneurs intended that the economy does not reach a situation of full employment, with the aim that workforce does not become a "scarce good". So, if wages remain low and profits high, unemployment is seen as a method of workforce preservation, a wages regulator and an intervenient of the capital accumulation. The author predicted that, just like the socioeconomic models precedents to capitalism, this model would cause conflicts between classes, leading to its own destruction and replacement by socialism, an economic system controlled by workers, the lowest class so far, creating a no classes society (Marx, 1975).

Following, the presented verthis view is about efficiency wages model developed by Solow (1979), which shows that the optimum real wages are fixed, regardless of the labour demand conditions. Theoretically, the production function only extends to the effective employment, assuming that capital is fixed. The effective employment corresponds to the amount of labour, multiplied by the level of effort. Solow (1979) also presumed that the effort level is an increasing and concave function of the real wage – the effort level rises with the real wage but at decreasing rate. So, if the wage is too low,

enterprises will raise it in order to increase the workers' effort because this increase of the effort is greater than the increase of wages, which becomes compensatory by the companies' perspective. If the salary keeps growing, workers' effort will continue by the same way until a point where both gains have the same rate. This point means that the progressive increase of the salary should stop and the optimal condition of equilibrium has been reached (Romer, 1996). Robert Solow and Paul Samuelson define an unemployment rate between 5% and 6%, to avoid prices inflation (Samuelson & Solow, 1960:187).

Another perspective is the study of Shapiro and Stiglitz (1984), which developed a theory about why the wages do not change (sticky wages) and about the lack of balance of labour market, which makes the unemployment an involuntary factor. Workers do not only offer working hours to the production process. They also have a certain level of effort when performing their work activities. The theory of the "efficiency wages" highlights the fact that workers' effort depends on their own salary. The higher the salary, the greater the effort by workers on their tasks. As companies want to maximize their profits, they will offer a greater salary than the one which would balance the labour market to acquire the best skilled candidates and to boost their effort. If the economy remains in full employment, workers deduce that they can minimize the effort because they just don't fear the dismissal possibility. They will immediately find a new job that matches with their career interests. Thus, the idea of a long period of unemployment makes them keeping work hardly.

The idea that job creation and destruction is based on the productivity gains was suggested by the Austrian economist, Schumpeter (1942), who proposed the concept of "creative destruction". His starting point was the study of the consequences of introducing innovations in labour economics system – this leads to the problem of machinery stated by Ricardo in 1821, and discussed by Marx, Wicksell and Hicks, and "creative destruction" means that unemployment has to be interpreted as a frictional phenomenon, resulting from production factors relocation. Schumpeter refuted the dichotomy between technological unemployment and cyclical unemployment, stating that the technical progress is an inherent factor of the economic cycle. In this approach,

the destruction of jobs related to those sectors where the technological innovations are the central focus, can be compensated by the creation of new jobs, due to the stimulation of the economic growth through increasing the investment level. Therefore, unemployment should be seen as an inevitable situation, but also a transitory phenomenon.

More recently, the "Search and Matching Theory" (Mortensen, 1982; Diamond, 1982a, 1982b; Pissarides, 1985, 2000; Mortensen & Pissarides, 1994), is based on the frictions that occur in the labour market as result of decentralized process of wage negotiations between workers who are seeking employment and companies with available jobs. Thus, it is possible to claim the existence of many variations in the creation and destruction of jobs and considering the unemployment as a transition between posts, although the unemployment rate is always constant.

Finally, King et al (1988) and Aghion and Howitt (1998) also debate over economic growth models based on education. So, the education level allows the adaptation to new jobs and increases the innovation, through knowledge and learning. Aghion and Howitt (1998) discuss the contradictory effects of the technological changes that lead, on the one hand, to the increase of population's well-being and to the transformation of the way they live and work, but on the other hand, to the technological changes which imply several social consequences such as the income inequalities.

After the presentation of all these theories, it is mandatory mentioning and explaining three types of unemployment. They are the Structural Unemployment, the Frictional Unemployment and the Cyclical Unemployment. The Structural Unemployment is related to the mismatch between the labour supply and the labour demand. It can be explained by the lack of skills of workers who are seeking for a job or the mismatch between the offered and the intended area of work (Van der Berge, 2014). An example is the constant progress of the technology that requires a continuous updating of skills and new training (Orlandi, 2012; Van der Berge et al, 2014). A country where this fact happens is Poland, where the several implemented reforms decrease the preponderance of agriculture in their economies and, on the other hand, other sectors achieved significant developments (Estevão, 2003; Eriksson, 2008). Hence, Estevão (2003) and Eriksson (2008) argue that one

of the consequences was the high rate of unemployment. Most of the population is only skilled for a specific job and they were not prepared to the changes of the labour market conditions, resulting in the Structural Unemployment.

Secondly, there is the Frictional Unemployment. According to Michaillat (2011) and Axtell et al (2016), this type of unemployment is always observed in the economy due to the labour market frictions, the uninterrupted movement of the workers and also the imperfect information. In other words, the workers keep seeking for the best possible job offer in terms of wages and conditions but they do not have all information about the available opportunities. So, there will be a period of time when the worker is unemployed, between the previous job and the new employment, called Frictional Unemployment.

At last, the Cyclical Unemployment is a reflection of the economy situation, i.e., if the country has a negative economic growth, the unemployment rate will be higher than in the opposite case, when the economy has been in a positive cycle (Michaillat, 2011; Pissarides, 2013). Obviously, over the economic downturn, labour demand surpasses the number of available jobs. Regarding to some of the countries in this study, the unemployment of Portugal and Greece is largely explained by the Cyclical Unemployment (Pissarides, 2013; Monteiro, 2014; Ghoshray, 2016). Additionally, according to Eurostat statistics and Varela et al (2013), Portugal, Spain and Poland are the countries where the weight of the workers with short-term contracts has greater significance (20.9%, 23, 7% and 27.6%, respectively, in 2012).

2.2. Conceptual Framework of Employability

According to Yorke (2006), employability is a set of personal achievements such as skills and knowledge of the individuals that increase the likelihood of obtain employment and success in their careers. Kearns (2001) adds that employability is based on individual work capacity, entrepreneurship knowledge and finally their creativity, innovation and learning skills. Employability has to be seen as a wide concept, surpassing the different perspectives that vary over space and time, between employers and employees and

between demand and supply, which allows the searching of explanations and political solutions through combinations of people's interactions, inside and outside of the labour market (McQuaid & Lindsay, 2005; Rothwell et al, 2009; Rivera et al, 2012).

Employability is a complex phenomenon and the scholars are not quite in accordance about how to define it. Therefore, there is no universal definition, but several definitions (Pereira et al, 2016). Concerning to the graduate's employability, there are definitions focused on graduate short-term employment outcomes, based on the skills that are more appealing for employers and, thus, enabling the graduate to find a job (Oria, 2012). There are other definitions that distinguish between employability and employment: "*the employability implies something about the capacity of the graduate to function in a job, and it is not to be confused with the acquisition of a job*" (Yorke, 2006:6). There are even broader definitions based on what is being an employee or a self-employed, and "*in this sense, employability also refers to entrepreneurship and the ability to create jobs, either for oneself and/or for others*" (Cardoso et al, 2014: 18).

Lastly, there are specific definitions about employability, like the employability of graduates that refers to the graduates' abilities to adapt and use their personal and academic skills for tangible measures of the educational outcome which associate the graduates' employability to the employment (Andrews & Higson, 2008; Knight & Yorke, 2004; Pereira et al, 2016).

Discussing employability suggests, therefore, a phenomenon known as the skill mismatch, which is subdivided by some relevant items related to individual skills and education level (Desjardins & Rubenson, 2011). There is the overeducation and undereducation, which are linked to the situation where an individual has more or fewer years of education than the job requires, respectively. The overqualification and underqualification describe the adjusting or non adjusting capacity of an individual qualification against qualifications' job requirements, respectively. The overskilling and underskilling are related to a worker possess or not the organizations' requested skills, respectively. Buchel (2001) argues that these terms result from a decision between the demand and supply of labour, between the individual's decision to work or to remain as unemployed, and between the decisions

of the employers about who will be recruited to his company, depending of the ideal skills for the offered job.

According to Eurostat data and the International Standard Classification of Education (ISCED) levels, the youth unemployment rate is bigger the lower the individual education level is, as shown the Table 2. The only exception is Greece, whose unemployment rates are higher for young workers with higher educanional attainment, in 2007, 2011 and 2013, which contradicts the previous statement. Furthermore, by introducing a new variable, the gender, we may conclude that women's youth unemployment rate is mostly greater than men's rate, with some exceptional cases like the youth unemployment rate of Latvia, in 2007 (M = 11.0% versus F = 10.0%) and, in 2011 (M = 31.3% versus F = 30.6%), both years related to the young people with all levels of education. In Spain was also verified two exceptional years. The youth unemployment rate in 2011, for the people inserted into level 0 and 2 of educational attainment (M = 53.1% versus F = 52.8%) and also, the group with all ISCED levels (M = 48.2% versus F = 44.0%); and in 2013 (M = 56.2% versus F = 54.6%) for all levels of education. Lastly, the youth unemployment rate of Portugal in 2013 (M = 40.7% versus F = 40.5%) for the lowest levels of attainment, levels 0-2, is an exception as well.

Table 2: Youth Unemployment Rate, By Gender, By Educational Level (%)

	2007				**2011**				**2014**			
	Levels 0 - 2		**All Levels**		**Levels 0 - 2**		**All Levels**		**Levels 0 – 2**		**All Levels**	
	M	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*
Portugal	14.0	20.4	13.8	20.3	31.6	35.0	29.0	31.7	37.7	42.4	34.2	35.4
Spain	16.8	26.5	15.2	21.7	53.1	52.8	48.2	44.0	59.8	63.2	53.4	52.9
Greece	12.1	31.7	15.5	31.7	38.5	55.5	38.8	51.6	46.5	61.6	47.4	58.1
Latvia	15.9	17.3	11.0	10.0	40.1	40.2	31.3	30.6	28.9	*n.a.*	19.4	20.0
Poland	21.1	27.7	20.0	23.8	30.4	36.2	23.6	28.8	29.0	32.1	22.7	25.5

Source: Own elaboration with data retrieved from Eurostat
n.a.: not available

Livanos and Nuñez (2014) reveal an important factor, in specific case of Spain. Although Spain is considered one of the worst European countries in terms of the employment perspectives of graduates, Livanos and Nuñez (2014) state that Spain represents the

European country with the biggest percentage of youth graduates (34%). This fact reflects a new term, known as skill surplus, characterized by the oversupply of graduates against the number of available jobs. On the opposite, the skill shortage happens when the demand for a specific skill exceeds the available supply of labour with such competence (in Cedefop, 2010). One example of the last situation is cited by Haskel and Martin (2001) and it happened in UK, when education institutions could not provide to their students the required skills of technical progress.

The people's need to match their skills to the requirements of companies is the biggest dilemma of most of the unemployed people and, simultaneously, the key to change their careers' course (Freire & Teijeiro, 2010). People acquire basic skills such as teamwork, communication skills and problem solving skills, combined with specific skills, throughout life (Cotton, 2001; Yorke, 2001; Houston, 2005). However, the biggest skill mismatch exists in some of these competences, mainly in problem solving skills, ability to work independently and ability to apply knowledge to practical situations (Harvey, 2000; Knight & Yorke, 2002). The authors state that most of the responsibility of skill mismatch is related with the systemic skills which should be the focus of educational system's improvements.

In an attempt to find solutions for skill mismatch and, consequently, for youth unemployment, there are many factors to analyse and understand. One of them is about differences of skill mismatch problem across countries. Each country implies distinct policies according to their specific characteristics (Ghignoni & Verashchagina, 2014; Hanushek et al, 2015). Another discussed item is the focus on specialized education, combining formal education of students with basic tasks learning to be performed in future jobs, which allows an easier transition from universities to the labour market – Germany is an example, where the vocational training system became successful but, simultaneously, it became difficult to replicate in other countries because of their cultural, social and economic condition (Euler, 2013; Ghignoni & Verashchagina, 2014).

In the last decade, employability of graduates has assumed a central role in scholars' concerns and discussions. In part this was motivated by the high rate of youth unemployment in some European countries, by the Bologna Process reform of the

European higher education system and by the new Europe Strategy 2020 which aims a higher education based in 'New Skills and Jobs'. Under the Bologna Process, the employability of graduates is a key objective, and was reinforced during the ministerial conference in Bucharest in 2012, highlighting the need to emphasise and reinforce the Higher Education Institutions' role in educate students with the knowledge and skills needed to ensure their employability (Pereira et al, 2016).

The Bologna Process takes employability as a key indicator, using it to rank universities, to define the level of available funding to universities, and to define number of courses vacancies. In other words, according to Pereira et al (2016) assessing employability will allow to informe current and future students on their potential career prospects. Furthermore, high rates of employment are used to promote the university and attract new students. According to Cardoso et al. (2014), only 9% of Portuguese HEIs, consulted in their study, do not refer its employability performance in its website.

The employability performance of HEIs also influences the level of funding that institutions receive. Pereira et al (2016), based on the Bologna Process Implementation Report (2015), refers on their study that in Bulgaria, for example, a HEIs place in the ranking influences the level of state funding it receives. In countries such as Czech Republic, Finland and Slovakia, graduates' employment is included in a funding formula based on which HEIs receive part of their budget. In the Czech Republic, Greece and Italy, institutions may receive additional funding based on graduates' employment indicators (European Commission, 2015).

In Portugal, the employability of graduates from the different HEIs is used to calculate the number of vacancies allowed of each degree (see article 64 of Law No. 62/2007, of 10 September) (Pereira et al, 2016).

2.3. Skills and Competences

The main goal of the present study is to analyse the impact of skills and competences, across different European countries and across different fields of studies, to improve the

graduates' employability. Universities and other HEIs need to adapt their educational programmes towards reducing the existence skill mismatch, according to some authors previously mentioned in the present article (Desjardins & Rubenson, 2011; Teijeiro et al, 2013). In fact, youth unemployment is also observed all over the world, which implies collaboration between European Union and other parts of the world, for example, the United States of America (USA). These countries pretend to simplify the educational system and clarify the employability's problems, mainly about the recent graduates. In general, when worldwide perspectives are discussed, it is possible to find a common point: skills are divided into two parts, "hard skills" and "soft skills".

Firstly, the hard skills include all of academic and technical wisdom acquired during the school time and, on the other hand, the soft skills comprise the way how students apply these hard skills, their knowledge and attributes, and the way how they behave into a professional environment. Some examples are the communication skills, the information and techonology skills, the thinking skills, among other personal skills groups (Casner-Lotto & Benner, 2006; Andrews & Higson, 2008; Villiers, 2010; Azevedo et al, 2012).

The question is what kind of skills, hard or soft skills, must be reinforced by the educational system or if both types of them have to be stimulated by academics, in order to enrich the students' academic formation and match the demands of labour market. There are different points of view about the importance level of both. Many authors see the soft skills as a complement of hard skills, being considered fundamental for the success on the present labour market, increasingly competitive (Nasir et al, 2011; Jackson & Chapman, 2012; Robles, 2012). Others defend soft skills as something more than an adjunct of hard skills. They recognize the soft skills as competences which allow students or graduates getting a job and to be successful on their tasks, developing innovative ideas and the capacity of problem solving (Bailey, 2014; Swiatkiewicz, 2014).

In order to proceed with subject's analysis, the empirical evidence shows a common subdivided list of skills to individually evaluate the impact of each one of its groups, which will support the methodological process (Ahonen & Kinnunen, 2015).

A better overview of the topic discussed throughout this study is the understanding of the Bologna Process as an important due to the connexion with graduates' employability. On 29th June, 1999, twenty-nine European countries signed a statement in the Italian city of Bologna, which basically consists on changing policies about the higher education system. This agreement encouraged a significant investment and the reformulation of teaching programmes (Cardoso et al, 2014). In fact, one of the goals is promoting the employability of graduates, in order to create better conditions of access to labour market. Considering the high youth unemployment rates verified in some European countries, the skills mismatch is one of the reasons for such reforms of the members' political agenda (Cardoso et al, 2014).

According to Table 1 and Banerji et al (2014), it is possible to conclude that the unemployment rates reached new highs in 2013. However, there is a wide gap between Northern countries and Southern countries. Countries in Southern Europe reveal an aggravation of skills mismatch between what graduates are acquiring and what labour market is requiring. So, countries such Portugal, Spain or Greece are forced to invest more in instruction consolidating those sectors by creating highly skilled jobs.

In summary, the three surveys used to collect data from students, academics and employers that will be explained on section 4, cover a set of ten skills groups, among soft and hard skills because, as conclude before, nowadays it is not only enough the technical skills transmitted to students during their graduation period. Thus, soft skills should also be considered on HEI's programmes. The Table 3 demonstrated in next section, enumerates and defines the set of ten skills.

2.4. Strategies and Recommendations for 2020

Discussing future prospects, it is possible to identify the society behaviour and the respective changes. From this point, the orientation of the unemployed population turns easier and the clarification of what competences must be given the real focus. The report of Davies et al (2011), belonging to the Institute For The Future, presents a forecast for 2020, offering many relevant clarifications. Initially, the authors describe a set of six

factors that might change the demographic and sociological conditions. They are the extreme longevity, the rise of smart machines and systems, the computational world, the new media ecology, the super structured organizations and finally, the globally connected world. It is important to enumerate these six drivers because they are required to formulate a list of ten fundamental skills between 2010 and 2020, such as the transdisciplinary; the sense-making; the social intelligence; the adaptive thinking; the creativity; the virtual collaboration; the cross cultural competency; the cognitive management; the new media literacy; and the computational thinking. Each one of these ten concepts should be explained with detail due to their central role and main objective of this study.

Starting with the Transdisciplinary, it summarizes the ability that an individual has to address and to cross information, to research and to apply different methods from several disciplines. This competence allows a diverse range of possibilities to enter in labour market and it also creates new research questions by crossing ideas among disciplines (Balsiger, 2004; Wickson et al, 2006; Siedlok & Hibbert, 2014).

Other skill that will be relevant in upcoming years is the Sense-making. The critical thinking is important because it differs from the qualities that technology provides and, given the preponderance of the technological world in the next decade, the sense-making is something that no computer is able to do. It allows a better people's understanding about their tasks, enhancing sense of the leadership, the supervision and the innovation (Ford et al, 2003; Ancona, 2011).

In the same segment emerges the concept of Social Intelligence. As the sense-making, it helps to distinguish people from computers and it is related to people's interactions among society, in general (Sternberg & Grigorenko, 2006; Bjorkqvist, 2007). According to Albrecht (2005), in this age where relationships become more artificial and virtual, where technology and information dominate people's lives, the social competences will have special focus such as social intelligence and adaptive thinking.

Additionally, the Adaptive Thinking is based on some of the points listed previously which are related with society changes and robotic domination. If labour demand's patterns also

change, the labour supply will get to adapt and looking for alternatives linked to more personal jobs that require instant action when faced different challenges of schedule (Gigerenzer, 2000; Wye, 2009).

No less important than previous skills is the Creativity, that always had a significant importance to the success of any career and, given an increasingly perfectionist society, it will be crucial (Biesma et al, 2007; Saliceti, 2015). Creativity is nothing more than the ability of an individual reconciling his capacities and his potential in order to create something new, useful and original. Stein (1974) also notes that mankind evolution is a result of this ability and while it exists, the evolution will proceed.

Another recent competence is the Virtual Collaboration, which appears as consequence of new computerized and technological dependent world (Ertmer et al, 2011; Avolio et al, 2014; Wu et al, 2015). This new era invariably brings positive and negative aspects. It is true that virtual world approaches people distanced by oceans, with a single click and a small screen. It is also true that there is no such physical proximity in relationships as before (Joshi et al, 2009; Yee, 2014). In the professional case, there are many enterprises whose teams share their ideas virtually. On the one hand, it becomes quite effective and less expensive but, on the other hand, it complicates the leadership actions, as well as the social welfare and everything else that is associated with working in a common physical space (Joshi et al, 2009; Yee, 2014). In the future, people need to acquire motivation skills and healthy relationships in virtual environment, denominated virtual collaboration (Clear & Kassabova, 2005).

The seventh competency to be defined and explained is the Cross Cultural skill. As the term implies, this competency involves an easy adaptation to different cultures, at professional level in this case (Núñez, 2000; Deardoff, 2006). In Portugal, for example, it is possible to observe a considerable number of graduates who emigrate in order to seek a job. This event will happen more frequently and the cross cultural competence will have a key role, not only for young people but also for those who want to take a job in different cultures.

It is also fundamental to approach another concept, the Cognitive Management. Bannert (2002) states the cognitive management consists in the ability of an individual to capture the necessary information to perform a certain task. Facing an increasingly competitive market, it will be privileged those who provide efficiency to their companies, as Nonaka and Takeuchi (2011) testify with Japanese economic success.

About new media literacy, which is already part of the society such as videos, smartphones, social networks and so on, it will be important the success of people on this field nowadays (Pungente et al, 2005; Ivanovic, 2014). The way that an individual is familiar with these new tools and the chosen method to transmit and convince the audience with his message makes the new media literacy one of the skills to invest during the academic life (Livingstone, 2004).

Finally, the Computational Thinking should be considered in future because, according to Davies et al (2011), it creates programs which facilitate the decision-making. These programs also help solving algorithmic problems with their results analysis, which affect positively the company. So, computational thinking is based on the ability of an individual to manage all the existing information, through the conciliation between virtual and real worlds (Wing, 2008).

In addition to the previous explanation, there are an important group of skills which are prevalent for the academic research during the 21st century. The implemented ten types of graduates' skills cover all parts of the world, including Europe, USA and Australia. Their definition is explicit on the Table 3, according to the empirical evidence of Ahonen & Kinnunen (2015) and Pereira et al (2016). Nevertheless, it is primordial the same individual explanation than the previous one about the recommended skills for the future.

Starting from the Communication Skills, the employers are looking for graduates who are capable of communicating information, ideas, problems and solutions to all types of audience, specialists and non specialists. The reporting of their knowledge and the arguing of their conclusions in a clear way and without vagueness are also some of the demanded communication skills, nowadays (Cenere et al, 2015; Feleciya et al, 2015).

The Personal Skills are the next on the list and, as Furnham (2008) and Redding (2014) explain, this group of skills are closely linked to the personality traits of each one. They are developed throughout people's life and they are related to confidence, adaptability, initiative, positive attitude, leadership, emotional control, determination, among others. Summarizing, the professional skills are the result of the combination between the knowledge, behaviours and competencies, which are influenced by workers' personality traits and their personal skills.

Table 3: Skills and Competences of the 21st Century

	Skills	Definition
1.	**Communication Skills**	Ability to listen, express and present ideas; Ability to persuade, to negotiate;
2.	**Personal Skills**	Self-confidence, positive attitude, strong work ethics;
3.	**Interpersonal Skills**	Ability to work in a team, to manage conflicts, networking;
4.	**Intercultural Skills**	Command of more than one language; Work in culturally diverse teams;
5.	**Learning Skills**	Ability to learn independently; Curiosity and drive for continuous learning;
6.	**Entrepreneurial Skills**	Flexibility, opportunity seeking, risk-taking;
7.	**Thinking Skills**	Critical, analytical, strategic thinking;
8.	**Information, Media and Technology Skills**	Ability to obtain and process information;
9.	**Virtual Collaboration Skills**	Ability to work productively in a virtual environment;
10.	**Technical Skills**	Professional field related skills to accomplish;

Source: Based on Ahonen and Kinnunen (2015) and Pereira et al (2016).

On the same line, the Interpersonal Skills also belong to the soft skills. According to Andrews and Higson (2008) and Spitzberg and Cupach (2011), they are expanded appropriately and spontaneously as the student acquires the maturity. Currently, the team work within the same function or within the same project but through different functions is a real substantiality of the organizations. The ability to manage difficult situations at work, about the field of interpersonal relationships, is also a requirement in

order to improve the employability of the graduates. Thus, it is crucial that any worker becomes competent on conflict, communication and argumentation.

Further, the Intercultural Skills are included on this study, as well. Jones (2013:1) attest that the "increasing globalization and the interconnectedness of multinational work environments have intensified the demand for graduates capable of operating in culturally diverse contexts". The intercultural skills comprise the understanding and managing of different views of the cultural world. Taking into account the cultural worldviews, the improvement of graduates' performance will help them integrating the labour market and building not only their own success, but also the success of the co-workers and teams on the professional environment (Smith & Comyn, 2003; Brooks et al, 2012).

Moreover, the Lifelong Learning is the only way to the graduates upgrading their skills and facing the technological and work's organization changes by globalization. The employers rather require those skills that enhance the ability to secure and maintain jobs, to switch to other types of jobs, and to confront the technological changes and the labour market needs (Evers et al, 1998; Knight & Yorke, 2004). The Learning Skills are imminent on the employability profiles of the graduates. The capacity of listening, assimilating the greatest level of information and knowledge as possible and also the desire of maintaining the learning process throughout life are some of the skills which can differentiate the graduates at the time of the integration on labour market (Knight & Yorke, 2003).

The sixth subject comprehends the Entrepreneurial Skills, which are related to the opportunity and initiative seeking, to the risk-taking, to the persistence and commitment, to the requirement of quality and efficiency on work, among other skills (Rae, 2007). Usually, the concept of entrepreneurial is associated with the idea of business management. However, it also can be contemplating as a propensity to innovate from external factors, including the challenges of the society changes, the risk-taking, the formulation of goals and their achievement (Timmons, 1989; Brown, 2000).

Likewise, the empirical research addresses the Thinking Skills as a component of the graduates' employability skills, arguing that the control of the reasoning involves the development of abstraction and integration capacities, the critical analysis and application (Norris, 1985: 44). Bloom (1956) and Baum (1990) complements the previous statement, claiming that these requirements develop the complex cognitive skills, which can be attained by interpreting data, formulating problems and hypotheses, planning experiences, forecasting and evaluating results, inferences and deductions.

Additionally, if the current world is totally globalized and constantly changing, it is important to discusse the capacity of the graduates to obtain and process information as a component of their curriculum (Crawford, 1983). Simultaneously denominated as ICT Literacy (Ahonen & Kinnunen, 2015), Eisenberg (2008:39) asserts that "today's successful companies are those that focus on meaningful uses of information and technology to a range of situations."

Another similar issue, due to its connection with the technological progress and the world globalization, are the Virtual Collaboration Skills. The social relationships experienced a mischaracterization and the pursuit of profits has become a fierce process. The physical environments began to be replaced by the virtual ones. Thus, according to Ahonen and Kinnunen (2015) and Pereira et al (2016), the employability of the graduates is also evaluated through the capacity to work productively in a virtual environment.

Finally, one of the most fundamental "hard skills" required by the employers are the Technical Skills. The graduates who are capable of performing successfully their specific work tasks will increase the likelihood of being hired (Andrews & Higson, 2008; Villiers, 2010). Specifying, the Technical Skills are a set of practical abilities, integrating the use of instruments, equipment and methods. They are identified with the technical knowledge, technological and scientific operation and they can be acquired either by education and training, or even through their personal development (Casner-Lotto & Benner, 2006; Azevedo et al, 2012)

The Business Management, Economics and Engineering studies were the chosen fields, subdividing the typology of the inquired students. According to mostly of the recent

frameworks, it is essential for business management graduates to include a strong evidence of communication skills in their curriculum (Conrad & Newberry, 2012; Jackson, 2014). Wilton (2008) goes further by saying that communication skills are the most important ability for the business management graduates, promoting themselves and applying it as managers. Furthermore, there is some empirical evidence that also proves the importance of the communication skills for engineering students (Burge et al, 2012; Xerry et al, 2014; Trevelyan & Tilli, 2015). The relevance of the modern communication technologies worldwide and the capacity to face the emerging engineers are some of the previous authors' points of view.

3. Characterization of the Five European countries: Differences and Similarities

In this chapter, the characterization of the five European countries under study will be addressed – Portugal, Spain, Greece, Latvia and Poland – based on the analysis of similarities and differences between their employment patterns and also on the comparison with European Union conditions.

3.1. Portugal

In the Portuguese case, the empirical studies about the subject of this study have intensified satisfactorily in recent years. All of interveners of Portuguese education system have worked to improve students' employability and decrease the youth unemployment (Cardoso et al, 2014). These authors also refer how relevant the role of Bologna Process is for this reform to become successful. The HEI have tried to implement a specific education programme, in order to fully prepare the students after three years of Bachelor. This simple change allows them to achieve the first graduation level of the new higher education system, within a shorter time, and immediately integrate into the labour market.

Looking for the last thirty years, since Portugal joined the European Economic Community (EEC), Santos and Fernandes (2015) note three distinct periods and present their respective characteristics (Table 4). The first decade translates into a recovery period, marked by an intensive growth of the GDP (4.1% per year, in real terms, almost the double of European average), growth of the private consumption (5.3% per year), investment (6.5% per year), exports (7.6% per year) and other elements of GDP whose growth rates are higher than the European Union average rates. The following decade, between 1998 and 2008, was the opposite. The real GDP grew less than half of previous period, similarly to all other components rates of growth, due to internal and external problems -financial and monetary integration and world trade's changes (Almeida et al, 2009; Santos & Fernandes, 2015).

Table 4: Portuguese versus Euro Area GDP's components (average annual growth rate, %)

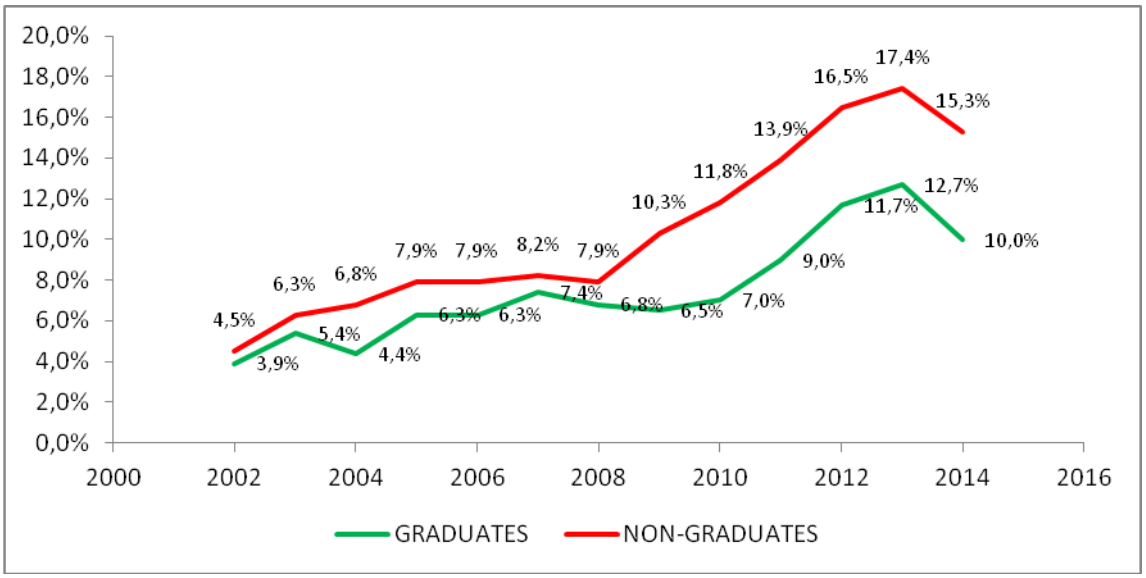
	PORTUGAL			EURO AREA		
	1986 - 1997	**1998 – 2008**	**2009 - 2015**	**1986 - 1997**	**1998 – 2008**	**2009 – 2015**
Gross Domestic Product	4.1	1.8	-0,8	2.4	2.1	0.1
Private Consumption	5,3	2.4	-0.8	2.4	1.9	-0.1
Public Consumption	4.5	2.3	-1.2	1.9	1.9	1.8
GFCF – Investment	6.5	1.0	-5.1	2.9	3.1	-1.8
Exports	7.6	4.4	3.2	5.9	5.7	2.8
Imports	12.2	4.6	0.6	6.1	5.8	1.9

Source: Adapted from Almeida et al (2009) and Santos and Fernandes (2015).
Data from Banco de Portugal and AMECO. Variables in real terms.

However, these two decades before 2008, which marks the beginning of the crisis period in all over the world, are not the worst era in terms of unemployment and debt. The financial crisis was the real fuse and it resulted in several economic and social problems such as the low level of economic growth, the low level of qualifications of Portuguese people or even a production sector based on low and medium-low technological (Reis et al, 2013; Santos & Fernandes, 2015). The Portuguese government was forced to implement several measures supported by European institutions such as the European Commission and the International Monetary Fund (IMF). Named as *Memorandum of Understanding* (MoU), this agreement is based on the internal devaluation policy, financial strategies and restrictive budgetary. Its main goals were to create job places and to recover the welfare of Portuguese economy and population. According to Reis et al (2013) and Santos and Fernandes (2015), the majority of the MoU's targets weren't achieved and they even found deterioration signals in some parts. They point the stagnation of the public deficit, of the GDP growth and also the modification of the economy's specialisation profile, of technological intensity of the exports and the labour productivity. They also highlight the failures about the public debt, export growth rates, innovative capacity and, the most important, the unemployment and demotivation level. Summarizing, since the implementation of these restriction measures, the negative results have overcoming the positive ones, which increases the poverty rate and social differences.

In spite of all the negative evolution proved previously, the statistical analysis of Cardoso et al (2014) refers some of the positive data over past decade. The number of graduates has increased, with the highest incidence in the public institutions. The number of students in 2nd cycle (equivalent to Master) also increased after Bologna Process establishment, which is an unexpected result comparing to the Process's goals (Stiwne & Aves, 2010). According to these authors, the Bologna Process's target would be to increase students' work experience after they conclude the 1st cycle. They also observed the changes of students' options like the study areas. Fields of study with more affluence have changed over time, adapting to society evolution. Another founded fact was the continuity of students' educational area across higher education cycles (Cardoso et al, 2014). Analysing the employability of the graduates, the authors found that the number of entries in labour market increased from 14% in 2002, to 24% in 2009, although the major cities capture most of graduate employees. Additionally, Figure 1 shows the increase of the gap between the unemployed graduates and non-graduates. In 2002, the difference between both was 0.6% and, in 2014, this gap raised to 5.3 percentage points. Thus, the importance of the participation on Higher Education has become significant.

Figure 1: Unemployment Rate of Portuguese Graduates versus Non-Graduates (%)



Source: Own elaboration based on Eurostat Data.

Alves et al (2010) and Cardoso et al (2014) point to the same pattern of difficulties such as Santos & Fernandes (2015) presented before, about connecting academic structure with the industry and adapting youth's training to the requirements of the labour demand. The creation of an employability official indicator or the partnerships between academic associations, educational institutions and companies, can dilute this difference, coordinating efficiently both sides (Cardoso et al, 2014). Cardoso et al (2014) also verified a decrease of the 1st cycle graduates' wages in recent years, in spite of the 2nd cycle and 3rd cycle graduates' wages remained constant.

In order to reverse the economic negative cycle in Portugal, specific measures based on the qualifications level, on the innovation and also on the technological procedures will be necessary, three of the main elements to approach Portuguese level to the European leaders. Some of these measures, according to Santos and Fernandes (2015), are the implementation of projects which increase the economic competitiveness, the innovation capacity and the workers qualifications, supporting by the European funds. The improvement of the Portuguese network related to the communication, science, entrepreneurship and business innovation is also an option taking into account.

Chaves et al (2009) complement stating that the unemployment rate for graduates is not as significant as public opinion, even during the economic and financial crisis that affected the entire national economy. Thus, the investment in the higher education has compensatory returns at the employability and salary levels.

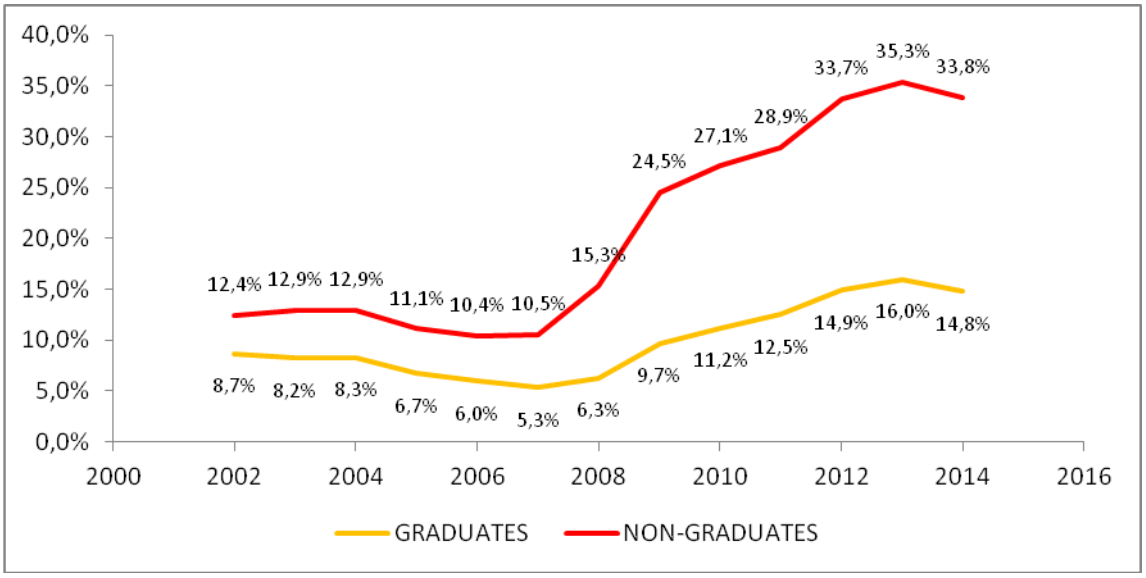
3.2. Spain

As well as Portugal, Spain is one of the Southern European countries that are going through a hard phase of its social and economic history. The empirical evidence attempts to correctly identify the flaws and it also points some serious problems, such as the high unemployment, particularly the youth unemployment which amounted 46.4% in 2011 for young people between 15 and 24 years old; and the early school leaving which includes 31.6% of the Spanish population (Mínguez, 2013).

Starting with the first issue, one possible reason to explain the high unemployment rate is the ineffectiveness of the employment policies, which does not facilitate the integration of the young people into the labour market. In fact, the intervention of the IMF fighting the Spanish debt and the structural measures of the government through job creation and internal devaluation, intended to decrease the wages level and, consequently, the production costs instigating more competitiveness (De Cos & Jimeno, 2013; Perez, 2014; Uxó et al, 2015), similar to Portugal.

García (2011) also verified a high segmentation. He states that youth's persistence leads to a state of uncertainty about future, to the lack of specific training and, consequently, to the unemployment. Concerning to the early school leaving, García (2011) recalls that it is a frequent problem since a couple of decades ago whose effects emerged now. Between 2007 and 2011, the unemployment rate of people with the lowest educational level increased 30 percentage points, reaching 52.6% and, the unemployment rate of non-graduates increased from 10.5% to 28.9%, in same period (Figure 2). It is also possible to conclude the increase of the gap between the unemployment rates of the graduates versus non-graduates, like in Portugal. According to Figure 2, this difference has raised, from 3.7% in 2002, to 19% in 2014.

Figure 2: Unemployment Rate of Spanish Graduates versus Non-Graduates (%)



Source: Own elaboration based on Eurostat Data.

Moreover, Mínguez (2013) states that the Spanish early school leaving exceeds any other country in Europe, corresponding to 39.2% of the total number of college students, the highest in the EU in last decade.

As summary, after the implementation of the IMF's policies, the obtained results were the stagnation of the competitiveness, the decrease of the families' income and the raise of the debt costs. So, the results weren't what the IMF expected and the external sector only improved due to the fall of the imports instead of the fall of the wages. They also failed about job creation, especially jobs for the young people. A half of the Spanish unemployed workers hadn't a job for two years or more (De Cos & Jimeno, 2013; Perez, 2014; Uxó et al, 2015).

As the Portuguese case, Spain joined to the European Economic Community (EEC) in 1986. Table 5 presents three different periods and their respective characteristics. Since then, the first decade demonstrates a positive cycle with significant growth of the GDP (3.0% per year, in real terms), growth of the private consumption (5.3% per year), the investment (2.8% per year), the exports (8.1% per year) and other elements of GDP whose growth rates are higher than the European Union average rates. The following decade, between 1998 and 2008, was quite similar. The average annual growth rate of the real GDP, Private Consumption and GFCF – Investment increased but not significantly. However, the Exports, Imports and the Public Consumption attained nearly four percentage points less. In 2009, due to internal and external problems - financial and monetary integration and world trade's changes, Spain was in deep recession (Almeida et al, 2009; Santos & Fernandes, 2015). These issues might be linked to the existing mismatch between the supply and demand of the labour. García (2011) considers some measures to undo this gap, such as control strategies of students with larger risk and motivation policies, showing the future benefits of education, particularly the facilities to find a job. The author also considers the reintegration of the former students who left school early as a solution, offering them an opportunity to keep their academic education and to increase their employability.

Table 5: Spanish versus Euro Area GDP's components (average annual growth rate, %)

	SPAIN			EURO AREA		
	1986 - 1997	**1998 - 2008**	**2009 - 2015**	**1986 - 1997**	**1998 – 2008**	**2009 – 2015**
Gross Domestic Product	3.0	3.7	-0.6	2.4	2.1	0.1
Private Consumption	2.8	3.4	-1.1	2.4	1.9	-0.1
Public Consumption	4.5	8.2	0.1	1.9	1.9	1.8
GFCF – Investment	4.6	5.9	-4.1	2.9	3.1	-1.8
Exports	8.1	4.9	3.2	5.9	5.7	2.8
Imports	11.2	7.2	-0.6	6.1	5.8	1.9

Source: Adapted from Almeida et al (2009) and Santos and Fernandes (2015).
Data from AMECO. Variables in real terms.

In the higher education, the beginning of the Bologna Process has been significant because it allows students to finish their first cycle in four years and to seek for available jobs on the labour market (Spain is one of the few European countries where the education system consists of four years of Bachelor degree and one year of Master degree). It should be complemented with more interventionist role of the companies through internships which promote the employability and the specific knowledge of the involved students (García, 2011). If the unemployment rate decreased since 2014, it is not due to the internal devaluation and the wages drop. In fact, the results of these measures were negative, between 2011 and 2013. Instead, the increase of employment can be related to the modifications of the monetary and fiscal policies or even a consequence of the oil price fall (De Cos & Jimeno, 2013; Perez, 2014; Uxó et al, 2015).

On the other hand, Mínguez (2013) supports the importance of having a common indicator of employability because, as in Portugal, it allows to advance with the empirical studies, correctly identifying the problems and the associated solutions, either in the education system or in the labour market.

3.3. Greece

Like the other Mediterranean countries discussed before, Portugal and Spain, the studies about Greek population's employability do not abound (Kokkos, 2013). Another similarity to the remaining countries is the installed economic crisis and its consequences such as

the unemployment. However, the author clarifies that high unemployment rate has been constant for decades, which indicates inherent structural issues to this problem. Theodoropoulou and Watt (2012), Zografakis and Kastelli (2015) and Theodoropulou (2015) provide a more thorough explanation about the economic facts of Greece, before, during and after the crisis. They justify the high level of unemployment with, not only the 2008's crisis, but also with some monetary and fiscal policies implemented before, which led to problematic issues about credit conditions, the payments balance and the domestic demand.

As mentioned for the previous analysed countries, the internal devaluation was one of the strategies assumed by the Greek government and, following the same direction as Portugal and Spain, this strategy did not emerging the expected positive results (Theodoropoulou, 2015). Table 6 shows that there is a significant and positive difference between the period of 1998 – 2008 and the others, observing a boost of the Greek economy. Despite the fact that all subjects have increased from the first period for the second, some subjects more than doubled, the trend of the third period remained, comparing to the other countries in this study because the 2009-2015 period belongs to the post financial crisis phase, which specially reached several European countries, as Greece (Theodoropoulou & Watt, 2012; Theodoropulou, 2015; Zografakis & Kastelli, 2015).

Table 6: Greek versus Euro Area GDP's components (average annual growth rate, %)

	GREECE			EURO AREA		
	1986 - 1997	**1998 - 2008**	**2009 - 2015**	**1986 - 1997**	**1998 – 2008**	**2009 – 2015**
Gross Domestic Product	1.8	3.5	-4.1	2.4	2.1	0.1
Private Consumption	3.1	3.7	-3.9	2.4	1.9	-0.1
Public Consumption	0.5	3.5	-3.5	1.9	1.9	1.8
GFCF – Investment	1.2	6.6	-14.0	2.9	3.1	-1.8
Exports	4.7	7.7	.0.4	5.9	5.7	2.8
Imports	5.9	8.5	-5.5	6.1	5.8	1.9

Source: Adapted from Almeida et al (2009) and Santos and Fernandes (2015).
Data from AMECO. Variables in real terms.

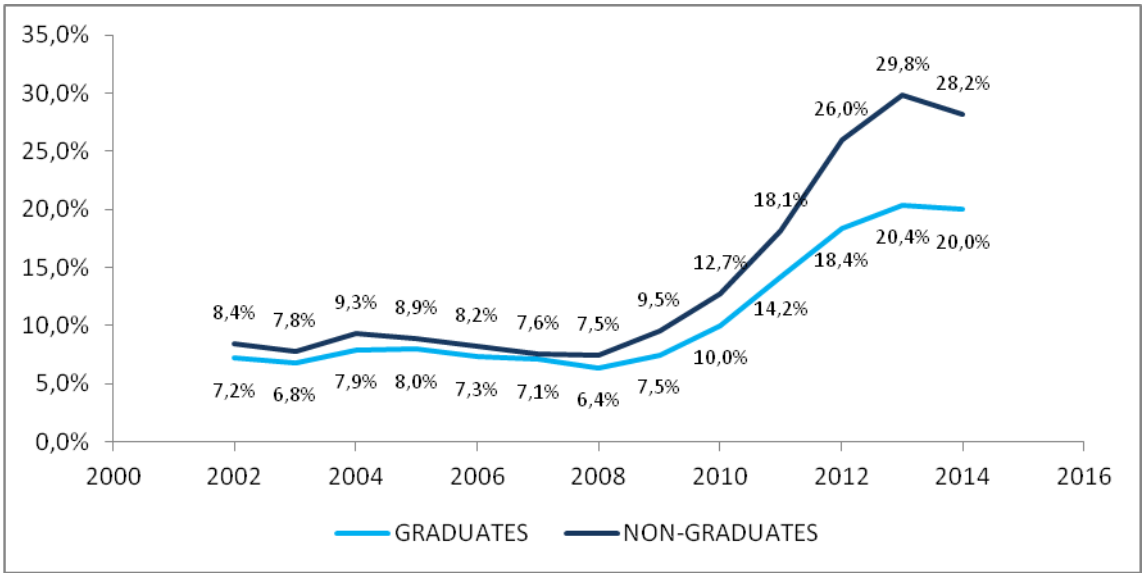
In fact, the Greek government was over commissioned which led to an inefficient application of the political methods, specially related to create jobs and increase the domestic demand. During the recession period, one of the ways founded by enterprises to overcome the fall of the profits was the dismissal of employees due to the facilities of the labour market deregulation (Theodoropoulou & Watt, 2012; Theodoropulou, 2015; Zografakis & Kastelli, 2015).

Asonitou (2014) also notes in Greece another common factor to the previously reported countries, such as the difference between the perceived skills by students and the required skills by companies. This factor became one of the causes of the existing high youth unemployment, especially about core skills. In the labour market, there also exists a salary mismatch among the level of the graduates' literacy (Kokkos, 2013).

Statistically, the previous author notes that the youth unemployment, aged 15-29 years, reached 42.7% in 2012, the highest in Europe. In this sense, the key politicians have intervened on the labour supply, seeking to increase the available jobs and neglecting the mismatch between supply and demand. In Figure 3, it is possible to observe the positive evolution of the gap between both unemployment rates, whose values increased from 1.2% in 2002, to 8.2% in 2014, which means that the higher educational level has been more significant over the decade.

Kostoglou and Siakas (2012) found through their study that between 5-7 years after the end of the academic formation, 8.4% of the respondents students are unemployed, 84.7% are employed and 6.9% are out of the labour market by their own choice. The authors also noted that 12.8% of the students created their own businesses, where men prevail to women, which shows the gender inequality. However, Livanos (2009) observed an encouraging attitude from young Greeks to advance their higher education, regardless of the country where they study, and remaining them out of labour market for a few more years. This phenomenon is explained by the higher education's conditions in Greece, where there are no associated costs and no time limit to finish it, which lead the students taking risks on the socially most prestigious areas, even if their future prospects are weak. According to the OECD report (2006), Greece is the country, in the world, with more doctors per capita.

Figure 3: Unemployment Rate of Greek Graduates versus Non-Graduates (%)



Source: Own elaboration based on Eurostat Data.

In summary, the necessity to take many steps at social, cultural and economic parameters is obvious, to reduce the skill mismatch and the unemployment rate (Kokkos, 2013; Asonitou, 2014).

The educational system should focus on the skill development that prepares the students for their working life, especially the core skills (Kostoglou & Siakas, 2012; Kokkos, 2013). Following this strategy, Asonitou (2014) defends the existence of internships during the entire higher education training instead of they only occur in last year. This modification will constantly challenge and motivate the students. The author also supports the post-internship discussion between students and their guiding teachers, in order to resolve any possible doubts, as a solution. Some of the developed projects so far cover these strategies, projects such as the Teacher Training Program, created by Education's Minister in 2011; and the Equal Project – "Collaboration for employment", organized by the Hellenic Adult Education in 2007, whose focus was the upgrade of the employment advisors' qualifications.

The Hellenic Adults Education (HEAE) also participated in other international projects, such as the European Grundtvig Program, which is about the education of adults, by developing their knowledge and skills and improving their employability. In fact, the

Grundtvig Program was one of the most important projects targeted to the adult population, in Europe. Its purpose was, fundamentally, the integration of susceptible groups with employability problems, by implementing new adult training methods and also through the Lifelong Learning concept. So, according to Athanasiou and Anagnostopoulou (2013), the Grundtvig Program aims to create a European economy based on knowledge.

3.4. Latvia

The development of the countries during the current information era is automatically related to human capital and knowledge. Innovations, production efficiency, high technology, competitiveness for a greater market power, among other factors, follow all the main goal of the companies, which is raising their profits (Lavrinovicha et al, 2014). Indeed, education and human capital have a significant and positive correlation with the economic growth (Romer, 1986).

Sipilova (2013) and Vasilevska and Golubkova (2014) list a couple weaknesses between education and labour market, in Latvia. The lack of specialists and human capital investments and the skill mismatch are some of them. The authors further state that, according to the Latvian entrepreneurs, the graduates have lack of motivation, lack of desire to learn and incapacity to make their own decisions. They also add that 90% of the higher education's students have good theoretical bases, despite of 43% of them are not familiar with the practical part.

Regarding the economic stability of the country, the financial crisis was also felt in Latvia, causing the biggest fall of GDP in such short time (about 25% of output). Table 7 illustrates the difference between the first decade of current millennium, 1998-2008, when the Latvian growth rates surpassed the averages of the Euro Area, and the post crisis period. So, all subjects suffered a significant decline, specially, the GFCF – Investment (from 15.8% of average annual growth rate, to -2.6% per year) and the Imports (from 10.0% per year, to 1.6%). Like the countries mentioned above, the unemployment's increase was one of the consequences too. In fact, the unemployment

rate of Latvia almost quadrupled between 2007 and 2010 (Weisbrot & Ray, 2011; Dvorak, 2014; Aslund, 2015).

Table 7: Latvian versus Euro Area GDP's components (average annual growth rate, %)

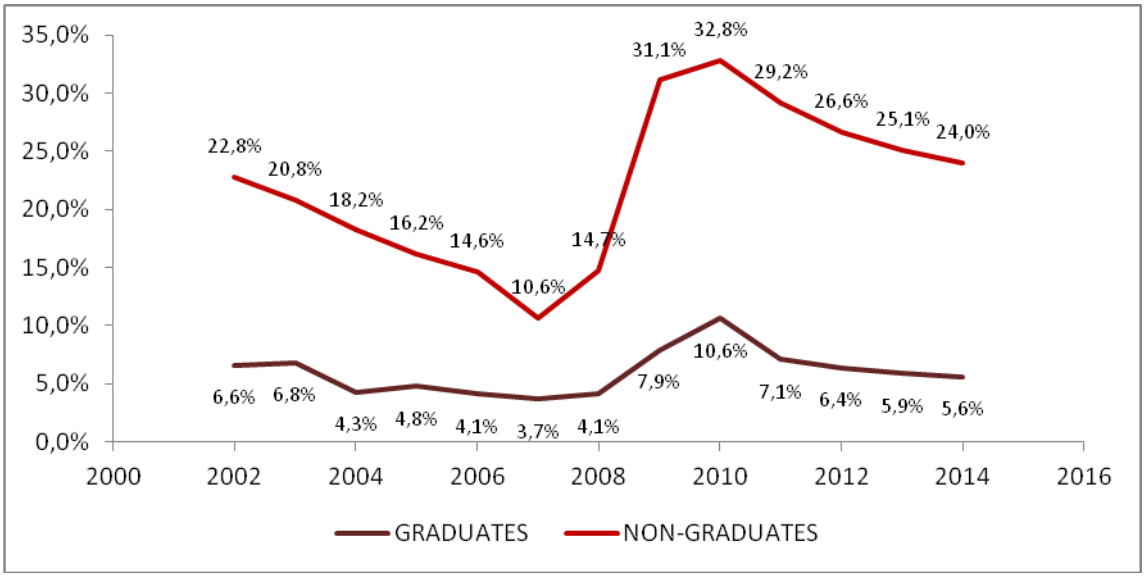
	LATVIA			EURO AREA		
	1995 - 1997*	**1998 - 2008**	**2009 – 2015**	**1986 - 1997**	**1998 – 2008**	**2009 – 2015**
Gross Domestic Product	-6.2	6.7	0.0	2.4	2.1	0.1
Private Consumption	5.2	6.2	0.5	2.4	1.9	-0.1
Public Consumption	-0.9	3.8	-0.9	1.9	1.9	1.8
GFCF – Investment	19.7	15.8	-2.6	2.9	3.1	-1.8
Exports	15.7	8.3	4.0	5.9	5.7	2.8
Imports	15.6	10.0	1.6	6.1	5.8	1.9

Source: Adapted from Almeida et al (2009) and Santos & Fernandes (2015).
Data from AMECO. Variables in real terms.
*Available data only since 1995.

Based on statistical data, Lavrinovicha et al (2014) noted that the number of unemployed graduates increased in last decade, from 12.100 in 2002, to 19.800 in 2013. In the same period, Figure 4 illustrates a decrease of the unemployment rate of the Latvian graduates (from 6.6% in 2002, to 5.9% in 2013), so, the only conclusion of this comparison is the implicit growth of the students' integration on HEI. In fact, the unemployed former students with the primary educational level decreased from 34.800 in 2002, to 24.300 in 2013. The explanation for this phenomenon is the migration of the labour force with lower literacy than higher education, and also the positive evolution of the Latvian qualifications, modifying the proportions between the education patterns.

The same strategy of internal devaluation of countries such as Portugal, Spain and Greece was also imposed here, at early 2010. The Latvian government and the IMF intended to fix the exchange rates and implementing pro-cyclical policies. They argued that these austerity measures were ideal to a faster economic and financial recovery, increasing the competitiveness and employment levels and, finally, reducing the production costs (Weisbrot &Ray, 2011; Dvorak, 2014; Aslund, 2015).

Figure 4: Unemployment Rate of Latvian Graduates versus Non-Graduates (%)



Source: Own elaboration based on Eurostat Data.

However, the authors also conclude that it wasn't the internal devaluation the main reason for the Latvian success. The initial strategy had more negative effects, such as the social degradation, the output, the high level of unemployment and the increasingly emigration of the Latvian population. The economic recovery after 2009 and 2010 is a result of several macroeconomic policies. Actually, the rise of the inflation caused by external shocks led to an expansionist monetary policy, reducing the debt. About fiscal policies, the Latvian government did not impose such tough fiscal policies as the required by IMF which, surprisingly or not, also helped the economic upswing of this European country (Weisbrot & Ray, 2011; Dvorak, 2014; Aslund, 2015).

In addition, due to the importance of the higher education on preparing the youth for their professional careers, transmitting relevant skills and competences for the future through strategies related to students' training and labour market conditions are important steps that should be taken. An example of these strategies is more favourable the contractual legislation, attenuating the differences between the education system and business world (Vasilevska & Golubkova, 2014).

Summarising, although Latvia remains with some weaknesses, this success case should be reviewed, especially by the countries that are experiencing serious economic difficulties

and also applied the internal devaluation strategy. It is possible that this kind of economic propelling might not be the correct one because it has becoming too costly and dysfunctional.

3.5. Poland

The last country being featured on this study about higher education and graduates' employability is Poland. It belongs to Eastern Europe, which reveals deep marks of the 2nd World War and communism, the political system dissolved in 1989. This historic event must be commented because it marks an economic, social and cultural turning point (Sojkin et al, 2015). A new law was created in 1990 allowing the emergence of private universities, something impossible to occur during the communist regime.

In spite of the lack of the data about the period before 1990's, Rozanski (2008) highlights the significant growth of the next 15 years. The number of the HEIs increased from 112 in 1990, to 427 in 2005, as well as the number of the university students, which quintupled. Poland became the country with more universities, public and private, from the entire Europe. Naturally, this academic expansion affected the Polish society and economy. Qualifications of workforce improved, and their number of graduates ascended from 15.35% in 2003, to 24.7% in 2009. The education system crossed through a growth phase, although below the OECD average (Kwiek, 2014).

It is difficult to evaluate the effect of government's political measures because some of the possible reasons for the economic growth might be externals. Some examples are the extension of EU, the relevant migratory trend and also the European monetary funds to help Poland, allowing the economic growth and, simultaneously, the decrease of unemployment rate. On the other hand, by imposing a flexible labour market and a positive fiscal policy, the Polish government has also an important contribution for the economic success, at the beginning of the century (Rae, 2013; Maciejweska et al, 2015).

Observing Table 8, Poland was the only country of the five in study demonstrating a constant economic performance over the years and nearly always above Euro Area's averages. Even in the period 2009-2015, when the remaining four countries in this study

collapsed, Poland has seen its annual growth rates decreasing but not significantly, and all of them positives. In contrast, the annual growth rates of the Euro Area GDP's components, such as the Private Consumption and the GFCF – Investment, are actually negatives, in same period (Myant & Drahokoupil, 2012; Myant & Drahokoupil, 2014).

Table 8: Polish versus Euro Area GDP's components (average annual growth rate, %)

	POLAND			EURO AREA		
	1990 - 1997*	**1998 - 2008**	**2009 - 2015**	**1986 - 1997**	**1998 – 2008**	**2009 – 2015**
Gross Domestic Product	3.4	4.2	3.0	2.4	2.1	0.1
Private Consumption	5.4	4.0	2.2	2.4	1.9	-0.1
Public Consumption	4.2	4.0	2.1	1.9	1.9	1.8
GFCF – Investment	9.8	5.8	2.9	2.9	3.1	-1.8
Exports	10.2	9.5	5.3	5.9	5.7	2.8
Imports	18.4	9.1	3.4	6.1	5.8	1.9

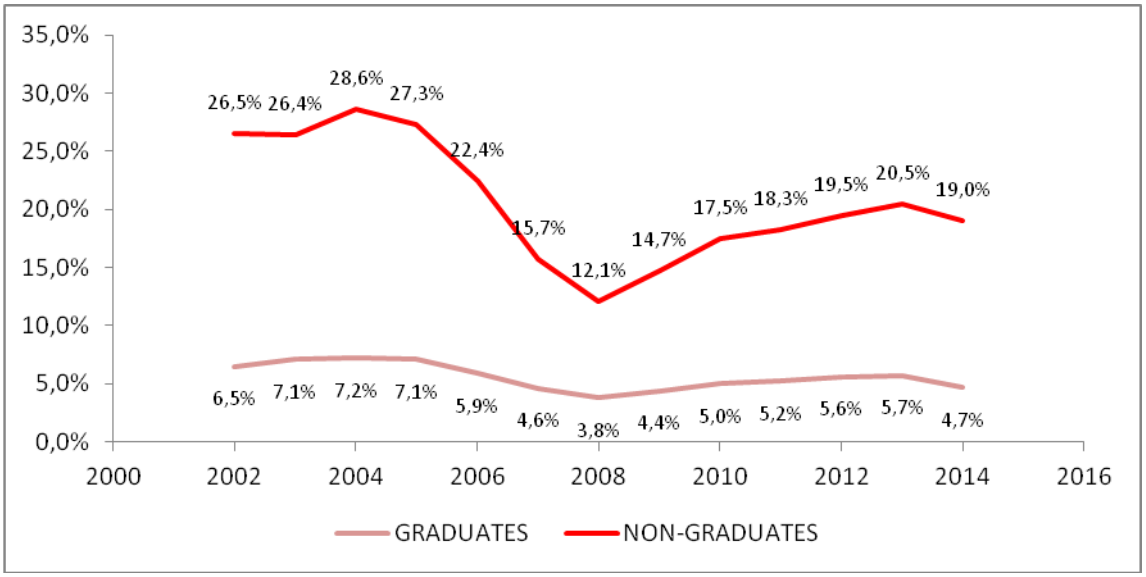
Source: Adapted from Almeida et al (2009) and Santos & Fernandes (2015).
Data from AMECO. Variables in real terms.
*Available data only since 1990.

The Polish higher education's prosperity ended in 2006, when the number of students showed a decline for the first time, since the communism low numbers (Sojkin et al, 2015). Sojkin et al (2015) also discuss the unemployment issue and its growing rate. In fact, Poland was the only EU country where existed economic growth in 2008 as mentioned before, although it has been by a sluggish rhythm (Myant & Drahokoupil, 2012; Myant & Drahokoupil, 2014). This status was collapsed and, in 2012, the Polish economy headed into a recession. The total unemployment rate duplicated from 7% in 2008, to 14% in 2013, mainly explained by the non-graduates' unemployment rate (European Economic Forecast, 2012).

Actually, the deregulation of the labour market and other policies implemented to fight the high unemployment rate was something that resulted during the first years but, at the end, the final consequence was the more unstable and precarious conditions of the labour. Thus, it is not possible to clearly affirm that by reducing labour costs and turning

labour market flexible, the unemployment rate will fall and economy will grow (Rae, 2013; Maciejweska et al, 2015).

Figure 5: Unemployment Rate of Polish Graduates versus Non-Graduates (%)



Source: Own elaboration based on Eurostat Data.

However, it was created, in 2010, several new development measures in the higher education, such as the Lifelong Learning Strategy and the National Quality Frameworks, pointing the horizon to 2020 (Kwiek, 2014). The author also concludes that the academic training keeps being rewarding at wages level, which demonstrates the recognition of the labour market about the learned skills of the graduates (Figure 5). Specifically, Kwiek (2014) also argues that the students with 1st higher education degree are able to start working, reflecting the full success of Bologna Process.

4. Data and Methodology

4.1. Data

In order to obtain information from both sides of the labour market, the #Europehome project collected the relevant data through three questionnaires, each one applied to the respective target groups: students, academics and employers, among five European countries, each one represented by a single partner university: University of Aveiro in Portugal, University of Alcalá d'Henares in Spain, Aristotle University of Thessaloniki in Greece, University of Latvia in Latvia and Technical University of Lodz in Poland.

The three questionnaires were delivered through the Survey Monkey website with an English version to the students and academics. About the employers, each one of the partners translated the questionnaire and sent it to the companies of their home country, except Greece. The questionnaires were sent to the employers of the companies from university's database. The applied questionnaires were converted on Microsoft Excel format, with the guarantee of the original version permanence.

The target group of students incorporates three fields of study: Business Management, Economics and Engineering/Computing. Therefore, it will be explained individually each one of the three target groups, for a thorough characterization.

Students

This study used a non-probability sample of 766 students, who mostly belong to the five project partners HEIs: 33.3% from University of Aveiro, in Portugal; 20.0% from University of Alcalá d'Henares, in Spain; 13.7% from Aristotle University of Thessaloniki, in Greece; 13.7% from University of Latvia, in Riga; 20.4% from Technical University of Lodz, in Poland; and 5.9% from other universities across the five countries (Table 9). Most of the respondents of the sample are current students (61.4%), against the already graduated (38.6%). They are also divided by field of studies: business management studies (30.8%); economic studies (19.6%); and engineering/computing (38.5%). In addition, 11.1% of the students are integrated in other different areas.

Table 9: Socio-demographic Characteristics of Students

	Socio-demographic Characteristics (n=766)	
	Graduates (n=296)	**Non-Graduates (n=470)**
	n (%)	
	University Represented	
University of Aveiro	197 (66.6%)	58 (12.3%)
University of Alcalá d'Henares	48 (16.2%)	105 (22.3%)
Aristotle University of Thessaloniki	17 (5.7%)	35 (7.4%)
University of Latvia	2 (0.7%)	103 (21.9%)
Technical University of Lodz	16 (5.4%)	140 (29.8%)
Other Universities	16 (5.4%)	29 (6.2%)
	Fields of Study	
Business Management Studies	52 (17.6%)	184 (39.1%)
Economic Studies	45 (15.2%)	105 (22.3%)
Engineering/Computing	174 (58.8%)	121 (25.7%
Other Fields of Study	25 (8.4%)	60 (12.8%)
	Present or Highest Acquired Degree	
Bachelor	83 (28.0%)	286 (60.9%)
Master	163 (55.1%)	146 (31.1%)
Doctoral/PhD	32 (10.8%)	13 (2.8%)
Other	18 (6.1%)	25 (5.3%)

Source: Own elaboration

About the present or the highest acquired degree, the Bachelor degree covers 48.2% of the total; the Master degree correspond to 40.3%; the Doctoral/PhD degree is equivalent to 5.9% of the students. The remaining 5.6% of the surveyed students are classified with another higher education's degree due to the different format of the higher education system before the Bologna Process's implementation.

Academics

The current survey inquired 203 academics, who belong to the five HEIs previously mentioned, with the following structure: 11.8% from the University of Aveiro, in Portugal; 19.7% from the University of Alcalá d'Henares, in Spain; 2.5% from the Aristotle

University of Thessaloniki, in Greece; 3.4% from the University of Latvia, in Riga; and 62.6% from the Technical University of Lodz, in Poland.

Table 10: Socio-demographic Characteristics of Academics

	Socio-demographic Characteristics (n=203)
	n (%)
	University Represented
University of Aveiro	24 (11.8%)
University of Alcalá d'Henares	40 (19.7%)
Aristotle University of Thessaloniki	5 (2.5%)
University of Latvia	7 (3.4%)
Technical University of Lodz	127 (62.6%)
	Current Position
Full Professor	18 (8.9%)
Associate Professor	53 (26.1%)
Assistant Professor	79 (38.9%)
Invited Professor	4 (2.0%)
Assistant	23 (11.3%)
Lecturer	21 (10.3%)
International Relations Office	0 (0.0%)
Career Centre	1 (0.5%)
Other Jobs	4 (2.0%)
	Fields of Study
Business Management Studies	27 (13.3%)
Economic Studies	36 (17.7%)
Engineering/Computing	44 (21.7%)
Other Fields of Study	16 (7.9%)
No answer	80 (39.4%)

Source: Own elaboration

Related to the current position in the educational institution, the project also subdivided the academics into eight diverse roles such as full professor (8.9%); associate professor (26.1%); assistant professor (38.9%); invited professor (2.0%); assistant (11.3%); lecturer (10.3%); international relations office (0.0%); career centre (0.5%); and other jobs (2.0%). Similarly to the students, there are academics connected to business management studies (13.3%); to economic studies (17.7%); to engineering/computing (21.7%); to other

fields of study (7.9%); and the remaining 39.4% academics did not refer which field they belong to.

Employers

The third target group under observation only comprises information of four countries, because Greece's survey responses were not effective enough to a concrete evaluation. Therefore, the provided data about firms' executives comprise 205 results, on which 86 are restricted to Portugal (42.0%); 67 to Spain (32.7%); 9 to Latvia (4.4%); and, lastly, 43 to Poland (21.0%). Regarding to the ownership structure, there is three options such as public (1.5%); mixed (3.9%); and mostly private (94.6%).

Furthermore, they were also asked about the number of the employees and the field of economic activity, as demonstrates the next Table 11. A large part of the businesses operates in the secondary sector (61.5%). The remaining are the primary sector (1.0%); and the tertiary sector (36.1%). Three of the inquired owners did not refer which industry they are integrated. As mentioned before, the method to collect the information from the target audience was through questionnaires, applied to students and academics by each partner university. Then, the five European universities spread the questionnaire's link over their databases by email, which was available during the whole month of March 2015. The total number of valid answers collected was 1204. The next step was processing and summarizing the information about the sociodemographic data, the employability skills and the graduates' employment, using the described tools represented on next section.

Among others, the relevant and common questions of the three questionnaires are about what skills and competences the three target groups consider acquired by students or graduates and which ones are fundamental to improve graduates' likelihood to get a job or to be competitive in the labour market.

Table 11: Socio-demographic Characteristics of Employers

	Socio-demographic Characteristics (n=766)			
	Portugal (n=86)	**Spain (n=67)**	**Latvia (n=9)**	**Poland (n=43)**
	n (%)			
	Number of Employees			
Less than 9	11 (12.8)	15 (22.2)	1 (11.1)	9 (20.9)
Between 10-49	26 (30.2)	18 (26.9	2 (22.2)	1 (2.3)
Between 50-259	23 (26.7)	12 (17.9)	3 (33.3)	11 (25.6)
250 and more	26 (30.2)	22 (32.8)	3 (33.3)	22 (51.2)
	Ownership Structure			
Public	0 (0.0)	2 (3.0)	0 (0.0)	1 (2.3)
Private	82 (95.3)	62 (92.5)	9 (100.0)	41 (95.3)
Mixed	4 (4.7)	3 (4.5)	0 (0.0)	1 (2.3)
	Field of Economic Activity			
Primary Sector	2 (2.3)	0 (0.0)	0 (0.0)	0 (0.0)
Secondary Sector	43 (50.0)	13 (19.4)	0 (0.0)	18 (41.9)
Tertiary Sector	41 (47.7)	52 (77.6)	8 (88.9)	25 (58.1)
No answer	0 (0.0)	2 (3.0)	1 (11.1)	0 (0.0)

Source: Own elaboration

A Lickert scale was used from 1 to 5 scale (1= not important and 5= very important). By the same 1-5 scale, the respondents were also inquired about the universities focus and the international experience's role. Finally, in order to evaluate the lack and the covered skills, the respondents were asked to rank each one of ten skills from 1 to 10. Thus, 1=lack the most and 10= lack the least, evaluating the skills gaps that should be repaired or the competences that students lack.

Another relevant subject of the questionnaires was the principal focus of the universities, in order to reduce the skill mismatch between acquired and required competences and improving the employability of the graduates. Five topics were defined in Table 12.

Table 12: Principal Focus of Universities to improve graduates' employability

1. Prepare courses more relevant to the labour market;
2. Include practical tasks and assignments in the courses;
3. Include sector specific work placements as an integral part of the study programme
4. Provide post-graduation support, by facilitating relations between graduates and companies
5. Provide on-going collaboration with the labour market actors

Source: Own elaboration

4.2. Methodology and Statistical Analysis

In order to proceed with the statistical analysis, it was resorted the statistical software IBM SPSS Statistics Version 23. The socio-demographic characterization is based on the descriptive statistics such as the means, the standard deviations, the maximum and the minimum.

Once the collected variables are considerable, it was addressed the econometric method of the Principals Components Analysis (PCA) of the Factorial Analysis, with the purpose of reducing the variables into the most important ones, about the topic under study.

The PCA is a multivariate statistical analysis technique, initially described by Pearson (1901) and later developed by Hottelling (1933), which linearly enables the reduction of the large number of the interconnected variables in a small number of factors that represent these same variables, simplifying the analysis to perform.

According to Manly (1986), the analysis' goal consists in having p variables and finding combinations of these which produce a range of factors that are uncorrelated. This author also mentions that the lack of correlation becomes an important property because it means that the factors measure different "dimensions" in the sample.

Kass and Tinsley (1979) suggest the use of the PCA when the purpose is, in addition to extracting the factors that relate the present variables in the sample under study, exploring the same relationship and describing the facts in question.

Thus, the PCA is a multivariate statistical procedure which transforms, through the method of the principal components extraction, into a number of initial quantitative variables correlated to a smaller number of independent variables (uncorrelated), designated principal components.

The principal components are the linear independent combinations of the original variables and they represent a data reduction method, reducing the number of the correlated variables, with the minimal information loss and a smaller number of uncorrelated variables (orthogonal), which summarize most of the information present in the original variables (Hair et al, 1995: 14; Pestana & Gageiro, 2003: 502).

Therefore, the PCA allows condensing the information of the large number of the original variables into a small number of orthogonal and independent factors that reduce the complexity and the multicollinearity of data's interpretation and minimizing the loss of information. These characteristics become relevant for the present study due to the large number of existing variables, resulting from its exploratory nature.

Some of the criteria to restrict the number of variables consist of withdrawing the variables whose communalities are lower than 0.5, or all of variables which contribute to a PCA's Measure of Sampling Adequacy (MSA) lower than 0.6 and a Cronbach Alpha lower than 0.7, according to Nunnally's criteria (Hair et al, 1995; Nunnally, 1978:245; Pestana & Gageiro, 2003:545). In the other hand, this method does not require a normal distribution of the analysed variables (Dunteman, 1989; Cheng, 1995).

After this variables' reduction process, the PCA's output has to reach some conditions to be valid. Starting by the sample, the number of valid cases must be higher than 50 (Hill & Hill, 2000:58). Another way to conclude the minimum size of the sample is multiplying five times the total number of variables (N = 5k), but only when variables are equal or higher than 15.

About Kaiser-Mayer-Olkin's (KMO), whose value is between 0 and 1, it determines if the initial variables can be efficiently factorized and it also evaluates the relation between two variables by retiring the effect of the other ones (Pestana & Gageiro, 2003:505). As

higher the KMO is, the better will be the variables' specification to the model. Pestana and Gageiro (2003) approve the following scale of the KMO: not significant (<0.60); reasonably significant (0.60> KMO >0.70); and, highly significant (>0.70).

The same authors argue that, not only in KMO, but also in Bartlett's Sphericity test, the starting point is the correlation matrix, which is compared to the identity matrix, measuring the possible redundancy between the variables that can be explained by a reduced number of factors.

For the extraction of factors, based on Pestana and Gageiro (2003), the results of the total explained variance was also considered and, according to the authors, it must be higher than 70%. After the extraction of the factors for the PCA, each one of the obtained solutions was submitted to a varimax rotation. This method leads to, according to Santana (1999:355) "*more simple solutions to interpret, and theoretically more meaningful*."

The varimax rotation method is done to maximize the square's sum of the variances of each factor loadings (Manly, 1986: 75). According to Pestana and Gageiro (2003: 504), such rotation "*minimizes the number of variables with high loadings a factor, obtaining a solution whose value approaches to one, in the case of association between the two, or approaches to zero in the absence of association*".

At a later stage, an analysis of the statistically significant differences was made, among the factors about some of the variables under study, using the Kruskal-Wallis test method and the Chi-square. The Kruskal-Wallis method is a non-parametric test used to test the null hypothesis that all the target groups have identical distribution functions, against the alternative hypothesis that at least two target groups have different distribution functions (Noben et al, 2015; Jonck, 2014). The F-test of the ANOVA is the similar but parametric method.

5. Results and Discussion

This section presents the results of the data, obtained with questionnaires and summarized by each group of skills, among other topics that will be explained, such as the ways of cooperation and the changes in HEI's educational programmes.

The results of PCA are also provided in this chapter, concluding where the most dispersed skill mismatch are situated and the respective adjustments on the higher education system.

In order to compare the scores between the acquired and required competences, Table 13 demonstrates the mean values of the competences which students and academics consider essential to acquire during the graduation period and the mean values of the competences which employers request when they pretend to employ. All of the mean values cover the five countries and all the fields of study integrated in questionnaires' answers.

Table 13: Competences acquired by the graduates and required by the employers

Competence	Acquired		Required	
	Mean	Standard Deviation	Mean	Standard Deviation
Communication Skills	4.04	0.84	4.44	0.74
Personal Skills	3.93	0.84	4.39	0.72
Interpersonal Skills	4.12	0.76	**4.52**	0.71
Intercultural Skills	3.73	0.86	4.03	0.86
Learning Skills	4.11	0.82	4.43	0.72
Entrepreneurial Skills	3.48	0.92	3.95	0.82
Thinking Skills	**4.14**	0.81	4.19	0.80
Information, Media and Technology Skills	3.91	0.89	4.14	0.75
Virtual Collaboration Skills	**3.45**	0.97	**3.50**	0.87
Technical Skills	3.87	0.94	4.21	0.89

Source: Own elaboration

According to the joint opinion of graduates and academics, the evaluations of the competences vary from a minimum of 3.45 for the Virtual Collaboration skills, to a maximum of 4.14 for the Thinking skills. On the other hand, the employers' expectations

of the acquired competences by students range from a minimum of 3.50 for the Virtual Collaboration skills, to a maximum of 4.52 for the Interpersonal skills.

It is easily observed that the scores of the required competences by the employers are slightly higher. Total mean of all competences is 4.18, whereas the total mean of the acquired competences by students is 3.88.

Furthermore, it's important to distinguish the observed asymmetries, as Table 14 can illustrate. Like the previous table, both summarize the mean scores of all countries and all fields of study integrated in this study.

Table 14: Ranking Order of acquired and required competences

Ranking Order	Competence	
	Acquired	Required
1	Thinking Skills	Interpersonal Skills
2	Interpersonal Skills	Communication Skills
3	Learning Skills	Learning Skills
4	Communication Skills	Personal Skills
5	Personal Skills	Technical Skills
6	Information, Media and Technology Skills	Thinking Skills
7	Technical Skills	Information, Media and Technology Skills
8	Intercultural Skills	Intercultural Skills
9	Entrepreneurial Skills	Entrepreneurial Skills
10	Virtual Collaboration Skills	Virtual Collaboration Skills

Source: Own elaboration

The item that the students and academics consider more relevant to acquire but employers do not require by the same way are the Thinking skills – ranked 1nd for students and 6th for employers. In opposite point of view, the item with the biggest difference between companies' relevance and students' perspective are the Communication skills – ranked 2nd for employers and 4th for students – and the Technical skills – ranked 5th for companies and 7th for graduates. These findings are an attempt to select and quantifying the skill mismatch of both sides of the labour market, universities and companies.

Observing the differences of the skills which graduates lack mostly, it is possible to make a similar comparison like the previous one, as the Table 15 and Table 16 can demonstrate. Recording that the scale is reversed comparing to other variables, so 1 means "Lack the most" and 10 means "Lack the least", the mean values of students' and academics' point of view range from 4.59 for the Personal skills, to a maximum of 6.97 for the Virtual Collaboration skills.

Table 15: Lacks of students' competences according to employers and HE's participants

Competence	Higher Education		Companies	
	Mean	Standard Deviation	Mean	Standard Deviation
Communication Skills	4.65	2.84	**3.46**	2.30
Personal Skills	**4.59**	2.79	4.25	2.60
Interpersonal Skills	4.72	2.52	4.60	2.34
Intercultural Skills	4.92	2.59	4.65	2.75
Learning Skills	5.27	2.45	5.32	2.50
Entrepreneurial Skills	5.03	2.57	5.05	2.55
Thinking Skills	5.31	2.60	5.46	2.33
Information, Media and Technology Skills	6.73	2.44	7.27	2.01
Virtual Collaboration Skills	**6.97**	2.19	**7.80**	2.42
Technical Skills	6.82	3.24	7.15	3.33

Source: Own elaboration

The employers also obtain the maximum mean score for the Virtual Collaboration skills equals to 7.80 and the minimum value is linked to the Communication skills, with 3.46. In opposite to the previous evaluation, the total mean score of all items is exactly the same for both, employers and HEI's participants – academics and students (5.50).

When the lack of competences is ranked, the main conclusion is the similarity between both points of view and the absence of significant differences.

Table 16: Comparison between acquired, required and lacks competences

Ranking Order	Competence	
	Lack HE	Lack Companies
1	Personal Skills	Communication Skills
2	Communication Skills	Personal Skills
3	Interpersonal Skills	Interpersonal Skills
4	Intercultural Skills	Intercultural Skills
5	Entrepreneurial Skills	Entrepreneurial Skills
6	Learning Skills	Learning Skills
7	Thinking Skills	Thinking Skills
8	Information, Media and Technology Skills	Technical Skills
9	Technical Skills	Information, Media and Technology Skills
10	Virtual Collaboration Skills	Virtual Collaboration Skills

Source: Own elaboration

But, if we reverse again the lack of competences ranking – now, 1 means "Lack the least" or "More Acquired" and 10 means "Lack the most" or "Less Acquired" - in order to compare the acquired and required competences presented before in Table 13, it's possible to retain big differences between the ideas of managers and HEIs' participants – academics and students (Table 17).

The perception of the employers about the lack of competences of the graduates in comparison to the own perception of the graduates and academics is largely the opposite. While universities' actors consider Virtual Collaboration skills as the least acquired competences group, employers assume it as the group which students acquired more or lack the least – ranked 10^{th} for the acquired competences' ranking and ranked 1^{st} for the companies' reversed ranking about the lack of competences.

Other examples but in the opposite way are the Communication skills – ranked 4^{th}, according to the answers of the academics and graduates related to the acquired competences, and ranked 10^{th} for the employers' reversed ranking of lack of competences – and the Interpersonal skills, with the same difference – 2^{nd} for the acquired competences through the universities participants' point of view, and ranked 8^{th} for the business owners' ranking.

Table 17: Comparison between acquired, required and lacks competences

Competence	Ranking Order			Ranking Order		
	Acquired	Lack Companies	Difference	Required	Lack HE	Difference
Communication Skills	4	10	**-6**	2	9	**-7**
Personal Skills	5	9	-4	4	10	-6
Interpersonal Skills	2	8	**-6**	1	8	**-7**
Intercultural Skills	8	7	1	8	7	1
Learning Skills	3	5	-2	3	5	-2
Entrepreneurial Skills	9	6	3	9	6	3
Thinking Skills	1	4	-3	6	4	2
Information, Media and Technology Skills	6	2	4	7	3	4
Virtual Collaboration Skills	10	1	**9**	10	1	**9**
Technical Skills	7	3	4	5	2	3

Source: Own elaboration

Such large differences are also observed if the required competences by employers are measured along with the ranking of the academics and graduates about their weaknesses. The gap in the Virtual Collaboration skills is the largest one again – ranked 10th for the enterprises' required competences and ranked 1st for the professors and students, about what they believe to acquired more or lack the least. Another similarity to the previous comparison is the difference of the Interpersonal skills – ranked as the most required competence for companies and ranked 8th over the evaluation of the students and academics.

In summary, the ideologies of what is learned in universities and what is asked in labour market are slightly distinct, i. e., some of the competences that graduates and academics classify as more acquired, are the competences which employers evaluates as the students lack the most.

Similarly, some of the competences that universities' participants consider that themselves lack the least or acquire more, are the competences which business owners require less. Indeed, this summary helps in attempt to quantify the skill mismatch and it is a starting point finding and implementing some alterations on the educational system. Thus, it was also evaluated as the principal focus that Higher Education's program should have, according to both sides' ideas.

According to the related idea of Schumpeter (1942) on the initial chapters, the concept of "creative destruction" is based on the frictional unemployment, one of the three unemployment types explained before. Although the author argues that the unemployment is transitory and an inevitable situation, the inherent technical progress of the economic cycle and the current technological innovations to create new available jobs will require new skills. Indeed, the observed skill mismatch can be explained by the lack of adaptation of the HEIs to the requirements of the employers, specifically, to the new skills of the 21st century. Pissarides (2000) also discussed this idea of creation and destruction of jobs. The Matching Theory, developed by him, also claims the transitory and constant unemployment, based on the frictions of the labour market caused by the imperfect information between workers and employers, during the negotiations.

The next table (Table 18) illustrates the mean scores of the five main possible focuses of the universities. It is perceptible the difference of the higher values of the HEI in comparison to the means of the companies. Such difference might suggest the lower importance given by the employers to the modifications of the educational system or it can also reveal that managers of the enterprises consider different problems' sources of the skill mismatch, far from the methodology of the universities.

For the HEI, the minimum is "Prepare courses more relevant for the labour market" (4.10) and the maximum is "Include practical tasks and assignments in the course" (4.42). For companies, the minimum is "Prepare courses more relevant for the labour market" (2.46) and the maximum is "Provide on-going collaboration with the labour market actors" (3.66).

Table 18: Principal focus of universities according to companies and HE's participants

Universities' Principal Focus	Higher Education		Companies	
	Mean	Standard Deviation	Mean	Standard Deviation
Prepare courses more relevant to the labour market;	**4.10**	0.86	**2.46**	1.47
Include practical tasks and assignments in the courses;	**4.42**	0.72	2.51	1.27
Include sector specific work placements as an integral part of the study programme	4.15	0.81	2.75	1.19
Provide post-graduation support, by facilitating relations between graduates and companies	4.11	0.80	3.62	1.22
Provide on-going collaboration with the labour market actors	4.14	1.86	**3.66**	1.40

Source: Own elaboration

Looking for both rankings (Table 19), one common point is the lowest relevance of the "Prepare courses more relevant to the labour market" – ranked 5th for both segments. The other topics are a reflection of the previous comparisons between the supply and demand sides of the labour market, where the discordance overcomes. The main focus of the universities, according to students and academics, should be "Include practical tasks and assignments in the courses" – ranked 1st. On the contrary, this item is the second lowest relevant for the employers – ranked 4th.

On the other way, if "Provide on-going collaboration with the labour market actors" must be the principal measure applied by universities, according to the employers' ideology – ranked 1st -, the same topic has only a neutral position of importance for the graduates and teachers – ranked 3rd.

Table 19: Ranking Order of universities' principal focus according to companies and HE's participants

Universities' Principal Focus	Ranking Order	
	H. Education	Companies
1	Include practical tasks and assignments in the courses;	Provide on-going collaboration with the labour market actors
2	Include sector specific work placements as an integral part of the study programme	Provide post-graduation support, by facilitating relations between graduates and companies
3	Provide on-going collaboration with the labour market actors	Include sector specific work placements as an integral part of the study programme
4	Provide post-graduation support, by facilitating relations between graduates and companies	Include practical tasks and assignments in the courses;
5	Prepare courses more relevant to the labour market;	Prepare courses more relevant to the labour market;

Source: Own elaboration

However, all of these facts cannot be directly compared because they incorporate data of five different countries and vary across field of studies. Returning to the mean values of the acquired and required competences, they will be subdivided by country and by field of study.

According to Table 20, the higher minimum value of the acquired competences, in Portugal, is founded in the Virtual Collaboration skills (3.61), and the maximum value is for the Learning skills (4.38). In Spain, the minimum score is also linked to the Virtual Collaboration skills (3.64) and the maximum score is for the Learning skills (4.25) as well; in Greece, the item with minimum value is similar, situated in the Virtual Collaboration skills (3.58) but, in opposite of two previous countries – Portugal and Spain -, the maximum value is the Interpersonal skills (4.29); in Latvia, the Technical skills has the lowest score (3.42) and the Personal skills has the highest (3.97); lastly, in Poland, the minimum mean value is the Virtual Collaboration skills (3.53) and the maximum value is connected to the Communication skills (4.05).

Comparing the total mean scores of acquired competences by each country, Portugal is ranked in 1st (4.05), followed by Spain (3.94), Greece (3.91), Poland (3.78) and Latvia (3.75).

Table 20: Acquired competences by the students, by country

Competence	Acquired Competences				
	Portugal	Spain	Greece	Latvia	Poland
Communication Skills	4.13	3.96	4.22	3.96	**4.05**
Personal Skills	4.10	3.95	3.88	**3.97**	3.89
Interpersonal Skills	4.28	4.19	**4.29**	3.90	4.01
Intercultural Skills	4.03	3.86	3.84	3.83	3.85
Learning Skills	**4.38**	**4.25**	3.89	3.89	3.90
Entrepreneurial Skills	3.69	3.70	3.74	3.58	3.58
Thinking Skills	4.16	4.01	4.17	3.94	3.73
Information, Media and Technology Skills	4.13	4.02	3.93	3.49	3.67
Virtual Collaboration Skills	**3.61**	**3.64**	**3.58**	3.51	**3.53**
Technical Skills	4.02	3.85	3.60	**3.42**	3.60

Source: Own elaboration

In addition, the required competences are illustrated in Table 21, where there are only four countries due to the lack of answers by the Greek companies. Starting by Portugal, the minimum mean score is for the Virtual Collaboration skills (3.58) and the maximum for the Interpersonal skills (4.61); in Spain, the minimum value is related again to the Virtual Collaboration skills (3.57) and the maximum for the Learning skills (4.48); in Latvia, the lowest mean score is attributed to the Virtual Collaboration skills (2.89) and the highest score is for the Communication skills (4.44); in Poland, the minimum is also linked to the Virtual Collaboration skills (3.39) and the maximum for the Learning skills and Communication skills (4.55).

As mentioned before, due to the lack of information by the Greek employers, it is not possible to compare the opinion of the academics, students and companies in this country. So, next table only covers the difference of mean scores related to four countries: Portugal, Spain, Latvia and Poland.

Table 21: Required competences by the employers, by country

Competence	Required Competences			
	Portugal	Spain	Latvia	Poland
Communication Skills	4.54	4.27	**4.44**	**4.55**
Personal Skills	4.51	4.33	4.33	4.27
Interpersonal Skills	**4.61**	4.45	4.22	**4.55**
Intercultural Skills	3.87	4.12	4.11	4.18
Learning Skills	4.39	**4.48**	4.22	4.46
Entrepreneurial Skills	4.20	3.87	3.11	3.79
Thinking Skills	4.35	3.92	4.00	4.42
Information, Media and Technology Skills	4.28	4.10	4.00	3.94
Virtual Collaboration Skills	**3.58**	**3.57**	**2.89**	**3.39**
Technical Skills	4.41	4.07	3.56	4.21

Source: Own elaboration

As Table 22 demonstrates, the biggest difference in Portugal is -0.51 for the Entrepreneurial skills; in Spain, it is -0.38 for the Personal skills; in Latvia, it is -0.51 for the Information, Media and Technology skills; and, in Poland, it is -0.70 for the Thinking skills. Along these lines, it is possible to point the main weaknesses of each country that HEI must reinforce in the future, in order to reduce the skill mismatch. On the other hand, the strengths are also observed. For example, the Intercultural Skills developed by the Portuguese HEI; the Thinking and the Virtual Collaboration Skills in Spain; the same Virtual Collaboration Skills in Latvia and Poland.

The negative signal of these difference values between the acquired and required competences means that employers give more importance to the respective item of skills than graduates and academics give, and vice versa.

The field of studies nominated previously – Business Management, Economic and Engineering – provide a similar assessment about the skills mismatch in the labour market.

Table 22: Difference of acquired and required competences, by country

Competence	Difference of Total Mean Scores (Acquired – Required)			
	Portugal	Spain	Latvia	Poland
Communication Skills	-0.41	-0.31	-0.49	-0.49
Personal Skills	-0.41	**-0.38**	-0.37	-0.38
Interpersonal Skills	-0.33	-0.26	-0.32	-0.54
Intercultural Skills	0.16	-0.26	-0.28	-0.34
Learning Skills	-0.01	-0.24	-0.34	-0.56
Entrepreneurial Skills	**-0.51**	-0.17	0.47	-0.21
Thinking Skills	-0.20	0.09	-0.06	**-0.70**
Information, Media and Technology Skills	-0.16	-0.09	**-0.51**	-0.27
Virtual Collaboration Skills	0.04	0.08	0.62	0.14
Technical Skills	-0.39	-0.22	-0.14	-0.61

Source: Own elaboration

According to Table 23, the graduates and academics consider more important acquiring: the Interpersonal skills (4.55), in Business Management studies and also in Economic studies (4.46); the Communication skills (4.47) and the Interpersonal skills (4.47), in Engineering Studies.

Table 23: Acquired competences by the students, by field of study

Competence	Acquired Competences		
	Business Management	Economic	Engineering
Communication Skills	4.53	4.33	**4.47**
Personal Skills	4.23	3.99	4.43
Interpersonal Skills	**4.55**	**4.46**	**4.47**
Intercultural Skills	4.41	4.27	4.23
Learning Skills	4.34	4.24	4.44
Entrepreneurial Skills	4.34	4.19	4.03
Thinking Skills	4.21	4.33	4.37
Information, Media and Technology Skills	4.16	4.21	4.13
Virtual Collaboration Skills	4.01	3.89	3.73
Technical Skills	3.94	3.89	4.03

Source: Own elaboration

On the other hand, the item with less relevance for the students and professors is the Technical skills (3.94), in Business Management studies; the Virtual Collaboration skills (3.89) and (3.73), in Economic and Engineering Studies, respectively.

Although there is no distinction between the fields of studies about the employer's answers, it is possible to compare the last three scores columns to the simple mean of "Required" – known as the expectations that enterprises' bosses have to employ a graduate in their own business – presented on the initial Table 13.

Thus, by comparing the skills' mean scores of the Business Management studies to the requests of employers, it was observed the biggest difference linked to the Virtual Collaboration skills (0.51); in Economic Studies, the largest gap is related to the Personal skills (-0.40); and, in Engineering Studies, the Virtual Collaboration skills achieve the highest difference (0.23), as Table 24 reports.

Table 24: Difference of acquired and required competences, by field of study

Competence	Difference		
	Business Management	Economic	Engineering
Communication Skills	0.09	-0.11	0.03
Personal Skills	-0.16	**-0.40**	0.04
Interpersonal Skills	0.03	-0.06	-0.05
Intercultural Skills	0.38	0.24	0.20
Learning Skills	-0.09	-0.18	0.01
Entrepreneurial Skills	0.39	0.24	0.08
Thinking Skills	0.02	0.14	0.18
Information, Media and Technology Skills	0.02	0.07	-0.01
Virtual Collaboration Skills	**0.51**	0.38	**0.23**
Technical Skills	-0.27	-0.31	-0.18

Source: Own elaboration

Principal Components Analysis

After a short explanation of the PCA's operation and its purpose transmitted in the section 5.2., "Methodology and Statistical Analysis", the obtained results will be revealed and discussed at this stage. For the extraction of the factors, it was considered the outputs of the KMO and Bartlett's Test of Sphericity (Table 26), the Cronbach's Alpha (Table 27), the Communalities (Table 28), the summary of the Factorial Analysis (Table 29), the Total Variance Explained (Table 29), the Scree Plot's graphic (Appendix 4) and the Reproduced Correlations matrix (Appendix 5).

The descriptive statistics of the collected data is presented in Table 25.

Table 25: Descriptive Statistics

	Mean	Std. Deviation[a]	Analysis N[a]
Local internship (Academics)	3,72	,440	766
Internship abroad (Academics)	3,65	,443	766
Way cooperate - career centres (Employers)	1,14	,848	766
Way cooperate - internships (Employers)	1,85	1,209	766
Essential Communication skills (Academics)	4,44	,371	766
Desirable frequency of the cooperation with universities (Employers)	,82	,574	766
Essential Interpersonal skills (Academics)	4,45	,330	766
Essential Communication skills (Students)	4,44	,690	766
Essential Personal skills (Students)	4,39	,656	766
Essential Personal skills (Academics)	4,39	,346	766
Covered Communication skills (Students)	3,61	,983	766
Covered Personal skills (Students)	3,45	1,037	766
Essential Communication skills (Employers)	4,44	,353	766
Essential Personal skills (Employers)	4,39	,342	766
Essential Interpersonal skills (Employers)	4,52	,339	766
Way cooperate - courses (Employers)	,29	,214	766
Way cooperate - surveys (Employers)	,72	,583	766
Role of an international experience (Employers)	3,46	,310	766
Study experience abroad (Employers)	3,16	,343	766

Source: Own elaboration

Given the number of the 766 valid answers and 19 variables, two of the conditions to authenticate the PCA analysis are matched, according to Hair et al (1995:98), Hill and Hill (2000:58); Pestana and Gageiro, 2003:502). So, these authors argue that the size of N must be equal or bigger than 50, which is true (N = 766); and if the number of variables (k) is bigger than 15, which is the case (k = 19), the minimum size of N must be five times of k (N = 5k), which is also a valid condition in this study.

The Kaiser-Mayer-Olkin is 0.741 (>0.600) and, for the Bartlett's Test of Sphericity, the value is 271.838 (sig. = 0.000).

According to Nunnally's criteria, the result of Cronbach's Alpha can be considered valid and equal to 0.823 (>0.700) (Hair et al., 1995:118; Nunnally, 1978: 245).

Table 26: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**,741**
Bartlett's Test	Approx. Chi-Square	**271,838**
of Sphericity	Df	**171**
	Sig.	**,000**

Source: Own elaboration

Table 27: Cronbach's Alpha

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,823	,773	19

Source: Own elaboration

The observed communalities in Table 28 are all bigger than 0.500, ranging between the minimum value of 0.662 (Essential Communication skills) and the maximum value of 0.884 (Way cooperate – internships).

Table 28: Communalities

	Initial	Extraction
Local internship (Academics)	1,000	,828
Internship abroad (Academics)	1,000	,823
Way cooperate - career centres (Employers)	1,000	,762
Way cooperate - internships (Employers)	1,000	,884
Essential Communication skills (Academics)	1,000	,662
Desirable frequency of the cooperation with universities (Employers)	1,000	,813
Essential Interpersonal skills (Academics)	1,000	,722
Essential Communication skills (Students)	1,000	,763
Essential Personal skills (Students)	1,000	,763
Essential Personal skills (Academics)	1,000	,666
Covered Communication skills (Students)	1,000	,796
Covered Personal skills (Students)	1,000	,796
Essential Communication skills (Employers)	1,000	,794
Essential Personal skills (Employers)	1,000	,721
Essential Interpersonal skills (Employers)	1,000	,743
Way cooperate - courses (Employers)	1,000	,735
Way cooperate - surveys (Employers)	1,000	,676
Role of an international experience (Employers)	1,000	,814
Study experience abroad (Employers)	1,000	,815

Source: Own elaboration

Extraction Method: Principal Component Analysis.

The Total Variance Explained represents the significant value of 76.23% (>70.00%). According to what Table 29 and the Scree Plot (Appendix 4) show, the result of the PCA is the definition of seven factors, using the Varimax rotation method.

The Varimax rotation method is a method of orthogonal rotation preferred by several analysts (Srivastava, 2002: 446). Pestana and Gageiro (2003: 517) also refer this point, due to the function of the orthogonal rotation which is "*surpassing the values loadings, so that each variable only associate with a factor*".

Table 29: Factorial Analysis (PCA)

Factors	Loadings	Communalities	Explained Variance (%)	Cum. Explained Variance (%)
Factor 1				
Way cooperate - career centres (Employers)	,865	,762	20,301	20,301
Way cooperate - internships (Employers)	,938	,884		
Desirable frequency of the cooperation with universities (Employers)	,901	,813		
Way cooperate - courses (Employers)	,844	,735		
Way cooperate - surveys (Employers)	,801	,676		
Factor 2				
Essential Communication skills (Employers)	,887	,794	12,025	32,326
Essential Personal skills (Employers)	,837	,721		
Essential Interpersonal skills (Employers)	,861	,743		
Factor 3				
Essential Personal skills (Academics)	,806	,666	10,529	42,856
Essential Interpersonal skills (Academics)	,825	,722		
Essential Communication skills (Academics)	,804	,662		
Factor 4				
Role of an international experience (Employers)	,900	,814	8,756	51,611
Study experience abroad (Employers)	,892	,815		
Factor 5				
Local internship (Academics)	,900	,828	8,673	60,285
Internship abroad (Academics)	,889	,823		
Factor 6				
Covered Communication skills (Students)	,889	,796	8,391	68,676
Covered Personal skills (Students)	,890	,796		
Factor 7				
Essential Communication skills (Students)	,870	,763	8,047	**76,723**
Essential Personal skills (Students)	,870	,763		

Source: Own elaboration

The Factor 1 explains 20.3% of the total variance and it is characterized by the variables related to the favourite way that the employers prefer to collaborate with universities. A

possible denomination for this component might be “Collaboration University-Companies”.

The Factor 2 is associated to the group of graduates’ skills which the employers expect they possess, in order to increase their employability. A possible denomination for this component might be “Graduates’ skills expected by Employers”.

The Factor 3 is similar to the previous one but from the perspective of the Academics. It is also related to the expectations about the graduates when they are applying for or working at employers’ companies. A possible denomination for this component might be “Graduates’ skills expected by Academics”.

The Factor 4 clearly underlines the importance of the “Relevance of the students’ experience abroad”.

The Factor 5 is also characterized by the students experience abroad but not only. Its real purpose is to highlight the role of an internship, local or abroad, which strengthens their employability from the perspective of the employers. Therefore, the component 5 can be referred to the “Importance of the internships”.

The Factor 6 contains a pair of variables related to the covered skills, which means the skills group that the students considerably improved during the graduation period. So, a possible denomination for this component might be “Skills acquired by Students during Higher Education”.

The Factor 7 stresses the perspective of the students about the primordial group of skills to integrate the labour market after graduation. This last component can be entitled as the “Essential graduates’ skills, perspective of Students”.

Summarizing, Table 29 illustrates several points in common among the three target groups: students, academics and employers. Over the essential and the lack of skills, there are three specific groups which should be reinforced, according to all respondents: Communication, Interpersonal and Personal Skills. Thus, it is important taking them into account and implement measures to find solutions for this problem, such as the cooperation between universities and companies. According to Factor 1, the collaboration through career centers, internships and the participation in relevant courses

and surveys should be seen as an important part of the process. In fact, the PCA demonstrates the importance of the internships, in opinion of the employers, what suggests that students are not perfectly prepared for the required tasks of the labour market. Back to skills, there is some disagreement between the three targets. While the employers consider the Technical Skills one of the most essential ones to be focused, students and academics underline the Thinking and Learning Skills.

Kruskal-Wallis Test

To further analyze the statistically significant differences, the Kruskal-Wallis test was implemented to the seven factors, among the three target groups (Students, Academics and Employers), among the five countries (Portugal, Spain, Greece, Latvia and Poland), among the academic fields (Business Management, Economics and Engineering) and, finally, among the current status of the students (Former Student or Current Student).

Table 30 – Statistically Significant Differences among the Studies Field for Academics

		Mean Ranks						
Academic Field	N	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Business Manag.	45	93,29	83,09	**96,16**	**80,62**	81,13	80,96	84,91
Economics	58	**88,16**	81,12	**75,53**	80,16	78,41	85,47	79,10
Engineering	60	**67,58**	82,03	77,63	84,82	**86,12**	79,43	82,62
Total	163							
Chi-Square		29,260	3,695	11,971	,805	11,487	1,397	2,549
Df		4	4	4	4	4	4	4
Asymp. Sig.		**,000**	,449	**,018**	,938	**,022**	,845	,636

Source: Own elaboration

From Table 30, there are statistically significant differences in Factors 1 (Collaboration University-Companies), 3 (Graduates' skills expected by Academics) and 5 (Importance of the internships). Specifically, for the academic field of Business Management, the Factor 3

predominates over the "Relevance of the students' experience abroad" (Factor 4). For the Economics studies, the Factor 1 predominates over the Factor 3 (Graduates' skills expected by Academics). At last, for the Engineering studies, the Factor 5 predominates over the "Collaboration University-Companies" (Factor 1).

Table 31 – Statistically Significant Differences among the Studies Field for Students

		Mean Ranks						
Academic Field	N	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Business Manag.	236	342,23	**332,12**	364,62	332,49	344,13	348,52	**364,68**
Economics	150	341,28	342,04	**361,22**	**335,89**	345,64	343,09	340,90
Engineering	295	339,87	347,58	**311,83**	**350,41**	336,14	333,92	322,11
Total	681							
Chi-Square		,019	,816	11,476	1,218	,323	,744	6,144
df		2	2	2	2	2	2	2
Asymp. Sig.		,990	,665	**,003**	,544	,851	,689	**,046**

Source: Own elaboration

From Table 31, there are statistically significant differences among the academic filed for students in Factors 3 (Graduates' skills expected by Academics) and 7 (Essential graduates' skills, perspective of Students). Specifically, for the academic field of Business Management, the Factor 7 related to the "Essential graduates' skills, perspective of Students" predominates over the Factor 2. For the Economics studies, the Factor 3 predominates over the Factor 4 (Relevance of the students' experience abroad). At last, for the Engineering studies, the Factor 4 predominates over the "Graduates' skills expected by Academics" (Factor 3).

Advancing to Table 32, the grouping variable is about countries. There are statistically significant differences in Factors 1 (Collaboration University-Companies), 3 (Graduates' skills expected by Academics) and 5 (Importance of the internships). Specifically, for Greece, the "Graduates' skills expected by Employers" (Factor 2) predominates over the

Factor 1. For Spain, the Factor 5 predominates over the Factor 1 (Collaboration University-Companies). For Latvia is the reverse, the Factor 1 predominates over the "Importance of the internships" (Factor 5). For Poland, the Factor 1 predominates over the Factor 2. Lastly, for Portugal, the Factor 3 (Graduates' skills expected by Academics) predominates over the Factor 5.

Table 32 – Statistically Significant Differences among the Countries for Academics

		Mean Ranks						
Country	N	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Greece	7	**67,43**	**158,43**	158,14	138,71	114,29	124,86	135,86
Spain	51	**100,09**	170,62	129,40	158,19	**182,13**	150,42	163,95
Latvia	10	**176,50**	149,80	150,70	142,70	**113,40**	142,50	124,20
Poland	196	**163,47**	**145,51**	147,28	149,67	147,79	153,00	147,83
Portugal	35	156,26	143,49	**193,40**	144,26	**133,14**	139,74	152,03
Total	681							
Chi-Square		29,260	3,695	11,971	,805	11,487	1,397	2,549
df		4	4	4	4	4	4	4
Asymp. Sig.		**,000**	,449	**,018**	,938	**,022**	,845	,636

Source: Own elaboration

The next Table 33, the statistically significant differences are in Factors 1 (Collaboration University-Companies), 3 (Graduates' skills expected by Academics) and 7 (Essential graduates' skills, perspective of Students). Specifically, for Greece, the Factor 3 predominates over the Factor 4. For Spain, the Factor 1 predominates over the "Essential graduates' skills, perspective of Students" (Factor 7). For Latvia, the Factor 7 predominates over the "Importance of the internships" (Factor 5). For Poland, the Factor 1 predominates over the Factor 7. Lastly, for Portugal, the "Essential graduates' skills, perspective of Students" (Factor 7) predominates over the Factor 1.

Table 33 – Statistically Significant Differences among the Countries for Students

		Mean Ranks						
Country	N	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Greece	52	436,19	340,88	**442,83**	**385,48**	377,54	353,21	342,65
Spain	153	**393,21**	390,73	345,71	364,42	368,35	367,50	**335,78**
Latvia	105	333,02	382,10	407,44	350,74	**332,80**	377,86	**407,66**
Poland	156	**411,59**	331,92	364,15	361,75	388,91	379,29	**327,01**
Portugal	256	**325,20**	376,52	346,15	374,89	365,39	355,81	**393,18**
Total	722							
Chi-Square		28,409	9,651	17,496	2,596	5,666	4,871	22,932
df		9	9	9	9	9	9	9
Asymp. Sig.		**,001**	,379	**,041**	,978	,773	,845	**,006**

Source: Own elaboration

The last table about countries is linked to the Employers (Table 34). It is possible to observe statistically significant differences in Factors 1 (Collaboration University-Companies), 3 (Graduates' skills expected by Academics) and 7 (Essential graduates' skills, perspective of Students).

Table 34 – Statistically Significant Differences among the Countries for Employers

		Mean Ranks						
Country	N	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Portugal	86	**62,42**	**110,67**	102,92	106,59	104,43	99,56	103,93
Spain	67	**135,50**	**88,86**	98,40	105,20	99,10	114,26	94,63
Latvia	9	**134,78**	134,11	113,33	**66,89**	102,00	75,33	132,89
Poland	43	**126,87**	103,17	108,17	99,94	106,43	**98,13**	107,92
Total	205							
Chi-Square		28,409	9,651	17,496	2,596	5,666	4,871	22,932
df		9	9	9	9	9	9	9
Asymp. Sig.		**,001**	,379	**,041**	,978	,773	,845	**,006**

Source: Own elaboration

Specifically, for Portugal, the "Graduates' skills expected by Employers" (Factor 2) predominates over the Factor 1. For Spain, the same Factor 1 (Collaboration University-Companies) predominates over the Factor 2. For Latvia, the Factor 1 predominates over the "Relevance of the students' experience abroad" (Factor 4). For Poland, the Factor 1 predominates over the "Skills acquired by Students during Higher Education" (Factor 6).

Table 35 – Statistically Significant Differences among the Current Status of Students

		Mean Ranks						
Current Status	N	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Current Students	470	**405,47**	380,41	399,75	381,25	388,61	397,48	**371,76**
Former Students	296	**348,62**	388,40	357,70	387,08	375,38	361,30	**402,15**
Total	766							
Chi-Square		11,994	,237	6,560	,126	,650	4,859	3,427
df		1	1	1	1	1	1	1
Asymp. Sig.		**,001**	,626	**,010**	,722	,420	**,027**	,064

Source: Own elaboration

Table 35 demonstrates the statistically significant differences in Factors 1 (Collaboration University-Companies), 3 (Graduates' skills expected by Academics) and 6 (Skills acquired by Students during Higher Education). Particularly for the Current Students, the Factor 1 predominates over the Factor 7 (Essential graduates' skills, perspective of Students). In opposition, about the Former Students, the Factor 7 predominates over the "Collaboration University-Companies" (Factor 1).

6. Conclusions

This study is based on the #EuropeHome project, being therefore related to the employability, the youth unemployment rate and the skills mismatch of five European countries: Portugal, Spain, Greece, Latvia and Poland. The described evolution of the youth and graduate unemployment rates allowed to conclude for different patterns in Europe. In 2007, based on Eurostat data, Greece was the leader among the five countries, with the highest rate (22.7%) of youth unemployment. The second one on the ranking was Poland (21.7%), followed by Spain (18.1%), Portugal (16.7%) and finally, Latvia with the lowest rate of youth unemployment (10.6%). Therefore, comparing these values to 2013, it is possible to observe that four of the five countries doubled or more than doubled the youth unemployment rate – Portugal (38.1%), Spain (55.5%), Greece (58.3%) and Latvia (23.2%) –, exception for Poland that only increased to 27.3%. This trend was reversed in 2015, when all of these five countries achieved lower youth unemployment rates than the previous years – Portugal (32.0%), Spain (48.3%), Greece (49.7%), Latvia (16.3%) and Poland (20.9%), although these values are still being considered high.

Starting from the bottom of this unemployment ranking, Latvia was the only country whose youth unemployment rate decreased from 2011 (31.0%) to 2013 (23.2%). In 2015, comparing the unemployment rate of graduates (5.6%) and the youth unemployment rate of non-graduates (24.0%), it was possible to observe that there are four times more unemployed people with no higher education, which can indicate, according to the results of the study, a positive evolution in order to match the graduates' skills and the necessities of the Latvian labour market, specifically through three skills groups: communication, personal and interpersonal skills. Based on the results of the obtained factors of PCA, the Factor 2 confirms the importance of these three skills groups.

After Latvia, the second country with lower youth unemployment rate was Poland – 27.3%, in 2013, and 20.9%, in 2015. One of the reasons for such low youth unemployment rate might be the "employment based on fixed-term contracts" (Polakowski, 2012: 6). The proportion of the Polish temporary labour is significantly higher, in comparison to the EU's average. Almost of these fixed-term contracts workers are the youth people, who are facing the instability and the risk of such precarious

employment conditions (Eriksson, 2008; Polakowski, 2012). Although the research about this country demonstrates that the academic instruction has rewards at wages level, what becomes the higher education a compensatory way, and that Bologna Process has contributed significantly to the preparation of the students for their integration on the labour market. The results also show the necessity of more common projects in order to improve the graduates' employability, through practical courses, internships, international initiatives and cooperation.

Portugal is situated in the middle of the ranking, immediately after Latvia and Poland. The Portuguese youth unemployment decreased from 2013 (38.1%) to 2015 (32.0%), but there still exist some difficulties about the connection between the education system and the labour market. Thus, it suggests that the way to adapt the instruction of the students to the needs of the employers is through the creation of partnerships between the academic associations, universities and companies, which corresponds in the obtained results of PCA factors' to the Factor 1, where the lack of cooperation between both sides is argued, especially by the Employers. Cardoso et al (2014) elucidate the importance of the Bologna Process. The HEIs have tried to implement a specific education programme, in order to full prepare the students after three years in a 1st Cycle study programme. This simple change allows them to achieve the first graduation level of the new higher education system, within a shorter time, and immediately integrate into the labour market. Chaves et al (2009) also add that the investment in the Higher Education has compensatory returns at the employability and salary levels (Figure 1) and the problem of the unemployment rate for graduates is not as significant as the non-graduates unemployment rate.

Following the Portuguese case, one of the highest unemployment rates of the five countries in study is Spain. The youth unemployment rate has been reduced in last couple of years, from 2013 (55.5%) to 2015 (48.3%). However, it is not as good as Spanish people and government would pretend. In the same row as Portugal, universities and companies should cooperate between them over several ways as career centres, courses, surveys and, mainly, internships. In fact, during this study, the characterisation of Spain showed

that the collaboration between education and labour market must be complemented with internships, one topic evidenced not only by Factor 1 but, especially by Factor 5.

Finally, Greece is the one with the worse employment conditions of the five countries, even after an observed decrease of the Greek youth unemployment rate from 2013 (58.3%) to 2015 (49.7%). The reasons of such high rate are similar to the previous countries, which are linked to the lack of cooperation, the lack of orientation of students and the significant skill mismatch. The obtained results and the empirical evidence prove this conclusion and point, as solutions for the skill mismatch problem, several measures such the increase of internships' time to the entire higher education programme, and not just on the last year; the post-internships discussion between the student, the employer and the head teacher; and lastly, the intensification of the core skills instruction.

In terms of economic reasons, the financial crisis in 2008 is not the only answer for the current economic status, in Greece. The implemented monetary and fiscal policies before 2008, led to problematic issues about credit conditions, the payments balance and the domestic demand. Hereupon, during the recession period, one of the ways founded by enterprises to overcome the fall of the profits was the dismissal of employees due to the facilities of the labour market deregulation (Theodoropoulou & Watt, 2012; Theodoropulou, 2015; Zografakis & Kastelli, 2015).

The perspective of Shapiro and Stiglitz (1984) of the "efficiency wages" highlights the fact that workers' effort depends on their salary. So, the greater the salary, more committed workers will execute their tasks. As companies want to maximize their profits, they will offer a greater salary than the one which would balance the labour market, acquiring the best skilled candidates and to boost their effort. Such theory is created by the market imperfections. If the economy remains in full employment, workers deduce that can minimize the effort because they just don't fear the dismissal possibility and they will immediately find a new job that matches with their career interests.

Moreover, Aghion and Howitt (1998) discuss the contradictory effects of the technological changes that lead, on the one hand, to the increase of population's well-being and to the transformation of the way they live and work, but on the other hand, to

the technological changes which imply several social consequences such as the inequality income and the unemployment. Thus, the idea of a long period of unemployment makes them keeping work hardly, in terms of improving the skills through specialized formation and in terms of effort on their jobs. The progressively number of students in 2nd cycle (equivalent to Master) after Bologna Process establishment, which is an unexpected result comparing to the Process's goals (Stiwne & Aves, 2010), might be a repercussion of the competitiveness in society, nowadays. The workers need to constantly update their skills owing to the new requirements of the labour market. At the moment, the Bachelor degree might not be good enough to match the employers' needs.

Specifically regarding to the skills that the surveyed people consider as **the most relevant and essential** for graduates, the employers refer the **Thinking skills, the Interpersonal skills, the Learning skills and the Communication skills**; and the students and academics insinuate the **Interpersonal skills, the Communication skills, the Learning skills and the Personal skills**. Thus, the prevailing skills of both sides are the Interpersonal, the Communication and the Learning skills. Therefore, the skills that the employers, academics and students consider that **graduates lack the most** are the same for both sides of the study: **the Communication, Interpersonal and Personal skills**. As mentioned before, based on the obtained factors of the PCA, they confirm the importance of these three skills groups.

The results also demonstrate two common ideas related to the principal focus of the universities: the Employers point the inclusion of practical tasks and assignments in the courses, the inclusion of sector specific work placements as an integral part of the study programme and the attachment of on-going collaboration with the labour market actors; the Academics and Students consider important the attachment of on-going collaboration with the labour market actors, the post-graduation support and the inclusion of sector specific work placements as an integral part of the study programme and the attachment of on-going collaboration with the labour market actors. So, the two main **focuses of the universities** are **the attachment of on-going collaboration** and **the inclusion of sector specific work placements** as an integral part of the study programme.

Thereupon, according to the results, in order to promote the **cooperation between universities and companies**, and consequently, helping the students increasing their employability, the best ways are through **career centres**, **guided internships during higher education studies**, preparing **courses targeted for employers** and **international experience**.

However, several limitations emerged during this study. Starting with the data collection, the employers of Greece did not provide their information. Furthermore, the obtained answers might not clearly represent the total population of students, academics and employers. In fact, the collected information about higher education is just related to five European universities. Thus, it is not possible to expand the same conclusions around the world.

This last topic leads us to one future recommendation about enlarging the target of the study to other universities and other countries, both within and outside the Europe. The second recommendation for the future is related to the evolution of the skill mismatch subject. Indeed, it would be interesting to analyse the evolution of the graduates' employability, the cooperation between universities and companies, and even the government behaviour regarding education issues, during the situation of no crisis. A third recommendation to move forward, in the coming years, is adding one variable about the wages of graduates already employed and the focus on "elder" graduates as well.

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Appendixes

Appendix 1 – Students' Questionnaire

Available in http://europehome-project.eu/news/take-part-survey-about-student-employability

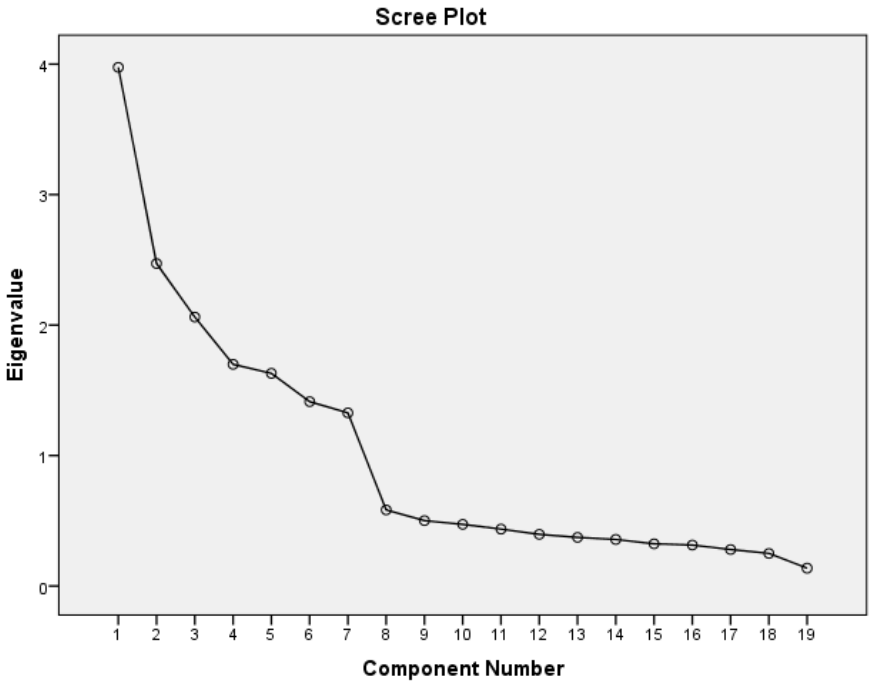
Appendix 2 – Academics' Questionnaire

Available in http://europehome-project.eu/news/take-part-survey-about-student-employability

Appendix 3 – Employers' Questionnaire

Available in http://europehome-project.eu/news/take-part-survey-about-student-employability

Appendix 4 – Scree Plot



Appendix 5 – Reproduced Correlations

	Local internship	Internship abroad	Way cooperate - career centres	Way cooperate - internships	Essential Communication skills	frequency of the cooperation with	Essential Interpersonal skills	Essential Communication skills	Essential Personal skills	Essential Personal skills	Covered Communication skills	Covered Personal skills	Essential Communication skills	Essential Personal skills	Essential Interpersonal skills	Way cooperate - courses	Way cooperate - surveys	Role of an international experience	Study experience abroad
Local internship	**,828**[a]	,816	-,163	-,092	,096	-,098	,131	-,003	,019	,041	,001	,010	,052	,029	-,001	-,176	-,188	-,052	-,122
Internship abroad	,816	**,823**[a]	-,182	-,120	,121	-,119	,147	,003	,023	,068	-,054	-,042	,127	,106	,070	-,194	-,210	,031	-,039
Way cooperate - career centres	-,163	-,182	**,762**[a]	,815	,034	,781	-,169	,035	,077	,008	,010	,029	-,006	,028	,045	,734	,694	,001	,022
Way cooperate - internships	-,092	-,120	,815	**,884**[a]	,053	,846	-,160	-,011	,038	,020	,004	,027	-,022	,012	,028	,786	,743	-,038	-,022
Essential Communication skills	,096	,121	,034	,053	**,662**[a]	,069	,659	-,031	-,029	,649	-,009	-,021	,094	,091	,087	,012	,085	-,014	-,024
Desirable frequency of the cooperation with universities	-,098	-,119	,781	,846	,069	**,813**[a]	-,139	-,023	,025	,043	-,015	,008	-,016	,021	,032	,759	,718	,006	,020
Essential Interpersonal skills	,131	,147	-,169	-,160	,659	-,139	**,722**[a]	-,055	-,066	,652	,041	,021	,050	,035	,031	-,185	-,094	-,084	-,097
Essential Communication skills	-,003	,003	,035	-,011	-,031	-,023	-,055	**,763**[a]	,758	-,089	,116	,070	,020	,003	,033	-,047	-,016	-,014	-,009
Essential Personal skills	,019	,023	,077	,038	-,029	,025	-,066	,758	**,763**[a]	-,083	,082	,034	-,041	-,051	-,025	,003	,035	,008	,006
Essential Personal skills	,041	,068	,008	,020	,649	,043	,652	-,089	-,083	**,666**[a]	,024	,012	,024	,039	,019	,014	,086	,090	,082
Covered Communication skills	,001	-,054	,010	,004	-,009	-,015	,041	,116	,082	,024	**,796**[a]	,792	-,019	-,003	-,014	,000	-,009	,004	,049
Covered Personal skills	,010	-,042	,029	,027	-,021	,008	,021	,070	,034	,012	,792	**,796**[a]	,031	,048	,034	,020	,000	,021	,068
Essential Communication skills	,052	,127	-,006	-,022	,094	-,016	,050	,020	-,041	,024	-,019	,031	**,794**[a]	,750	,765	-,087	-,153	,085	,119
Essential Personal skills	,029	,106	,028	,012	,091	,021	,035	,003	-,051	,039	-,003	,048	,750	**,721**[a]	,725	-,037	-,106	,170	,202
Essential Interpersonal skills	-,001	,070	,045	,028	,087	,032	,031	,033	-,025	,019	-,014	,034	,765	,725	**,743**[a]	-,036	-,100	,079	,117
Way cooperate - courses	-,176	-,194	,734	,786	,012	,759	-,185	-,047	,003	,014	,000	,020	-,087	-,037	-,036	**,735**[a]	,694	,093	,109
Way cooperate - surveys	-,188	-,210	,694	,743	,085	,718	-,094	-,016	,035	,086	-,009	,000	-,153	-,106	-,100	,694	**,676**[a]	,041	,054
Role of an international experience	-,052	,031	,001	-,038	-,014	,006	-,084	-,014	,008	,090	,004	,021	,085	,170	,079	,093	,041	**,814**[a]	,809
Study experience abroad	-,122	-,039	,022	-,022	-,024	,020	-,097	-,009	,006	,082	,049	,068	,119	,202	,117	,109	,054	,809	**,815**[a]

Extraction Method: Principal Component Analysis.

a. Reproduced communalities

b. Residuals are computed between observed and reproduced correlations. There are 17 (9,0%) nonredundant residuals with absolute values greater than 0.05.